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ABSTRACT

A 4-year follow-up study of children in the Rural Child Care Project has shown that greatest losses in intellectual functioning for former project children occurred in the first year of public school among those scoring above 80 on their first Binet but who were retained in grade 1. IQ change during grade 1 was negatively related to attendance at a project center and unrelated to social services received by the family. IQ loss was inconsistently related to qualitative Binet performance over time. Parent awareness and use of community, school, and project resources were unrelated to length of project participation. Despite differences between project mothers, project teachers, and middle-class mothers (in intellectual functioning, educational achievement, reported educational attitudes, and control strategies), project mothers were equal to or more effective than project teachers in teaching their children to perform structured tasks. Although project teachers found parent training procedures difficult to implement, this project demonstrated the benefits of such procedures to both parents and staff. While children in the current program almost 2 years performed no better on UCLA Language Tests or Preschool Inventory than children with less than 1 year's experience, they were higher than summer Head Start children in general achievement. After discussion of these and additional findings, the document provides recommendations for improving the project within a "focussed services" model which stipulates specification of behavioral objectives and joint training of child development and homemaking staffs in the use of child-centered activities as a primary means of increasing family adequacy. (Author/MJB)

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1969-1970 Research Evaluation

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FINAL REPORT

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U A Plan for the Development of Focussed Services Program Variations Within the Rural Child Care Project (Outline)

Kentucky Child Welfare Research Foundation, Inc.

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The final report of the 1969-1970 evaluation of the Rural Child Care Project marks the completion of a three year contract with the U.S. Office of Economic Opportunity and the Appalachian Regional Commission to carry out follow-up and concurrent evaluation studies of this ten county Head Start program located in Appalachian Kentucky.

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ABSTRACT

The 1969-1970 evaluation of the Rural Child Care Project had six major objectives: (a) To examine intellectual change in former Project participants as a function of initial intellectual status and promotion within the early grades. (b) To assess the relationship between exposure to Project child development and social services and subsequent intellectual functioning. (c) To ascertain if the length or intensity of exposure to Project social services is related to parent awareness and use of community resources. (d) To determine the effectiveness of Project Teachers in training parents to use teaching skills. (e) To investigate differences between middle class mothers, Project Teachers and Project mothers in intellectual ability, child education attitudes, and teaching effectiveness. (f) To evaluate language functioning of current Project children and to compare them with summer Head Start and middle class children in terms of intellectual functioning and general achievement.

The four year follow-up study has shown that the greatest loss in intellectual functioning for former Project children occurred in the first year of public school among those who scored above 80 on their first Binet but were retained in first grade. I.Q. change during first grade was negatively related to attendance at a Project center and unrelated to social services received by the family. I.Q. loss was inconsistently related to qualitative Binet performance over time. Parent awareness and use of community, school and Project resources was unrelated to length of Project participation. Despite differences between Project mothers, Project Teachers and middle class mothers in intellectual functioning(WAIS), educational achievement, reported educational attitudes and control strategies, Project mothers were equal to or more effective than Project Teachers in teaching their children to perform structured tasks. Although Project Teachers found parent training procedures were difficult to implement within the current county level role structure, this pilot project demonstrated the benefits such procedures can provide both parents and staff. While children who have attended the current program almost two years performed no better on the UCLA Language Tests or Preschool Inventory than children with less than one year's experience, they were higher than summer Head Start children in general achievement. There was no evidence that less than one year's enrollment in the Project increases intellectual functioning (WPPSI). Project and summer Head Start children scored significantly lower on the WPPSI and Preschool Inventory than indigenous middle class children. Recommendations for improving the Project are made within a "focussed services" model which stipulates specification of behavioral objectives and joint training of child development and homemaking staffs in the use of child-centered activities as a primary means of increasing family adequacy.

PROBLEM

The focus of the Rural Child Care Project since its inception in March, 1965,[1] has been to provide child development, social work and homemaking services to culturally disadvantaged children and their families in ten Appalachian counties of eastern Kentucky. To date, two child development centers with combined facilities for 60 children have been established in each of the following counties: Elliott, Floyd, Harlan, Knott, Lee, Letcher, Magoffin, Morgan, Owsley and Wolfe. Two "outreach" centers in Harlan county and one in Knott county offer services to an additional 75 children. Each child development center provides a five-day-a-week program for children from four to six years of age.

The Rural Child Care Project is based upon three assumptions: First, that educational and social experiences provided in the child development centers will enhance the educability of rural disadvantaged children; second, that Project social services will be instrumental in improving the home environments and personal-social adequacy of rural disadvantaged families; and third, that indigenous, non-professional persons can be trained to provide child development, social work and homemaking services for rural disadvantaged families.

The first two assumptions are supported by a growing awareness in the field of early education that contemporary programs for disadvantaged children based upon a deprivation model (i.e., which provide "enriching" experiences to compensate for assumed stimulus deprivation in the child's home environment) or upon any approach that is not family-centered are inappropriately designed to re-socialize the child and his family.

> (An) issue in early education is whether socioeconomically disadvantaged children can successfully be socialized or educated in isolation...without involving their family and community reference groups...The cultural distance and status differential between home and classroom are considerable. In order to be effective, the school must function not only as a socializing agent but as a re-socializing agent...it must find ways to deal with those subcultural influences upon learning styles which act in opposition to the learning and teaching climate of the classroom.
> (Hess in Hess and Bear, 1968)

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[1] A complete description of the Rural Child Care Project is found in The Rural Child Care Project, 1968-1969 Final Report, Volume I, October, 1970, by Judith P. Archambo and May E. Briscoe.

The third assumption, that indigenous non-professionals can provide re-socializing services to rural disadvantaged children and their families runs counter to the prevailing opinion that effective teachers (and presumably any staff personnel directly involved in the educational process) must serve as articulate models of the attitudes and skills being taught. Current reviews of research on Head Start programs, for example, indicate that intellectual growth in young disadvantaged children is directly related to active intervention in task-oriented and verbal activities by the Head Start teacher (O'Brien and Lopate, 1968).

Although substantive changes have occurred in the child development program of the Rural Child Care Project since 1967,[1] a systematic evaluation of its effectiveness with Project children and their parents has not been carried out. The focus of previous research evaluations of the Project (Briscoe and Archambo, 1969; Archambo and Briscoe, 1970) has been upon short and long range follow-up assessment of intellectual (toward education, child rearing and general morale) and improvement in household conditions as a function of exposure to Project social services have been assessed for parents. The attitudes of the community toward the Project have been studied. In addition, a study of on-the-job performance of the non-professional staff was done. A problem with these studies, in addition to the unavoidable problems of finding appropriate control groups and exercising any degree of control over treatment effects, has been the difficulty encountered in relating changes or lack of change on dependent measures to specific program input variables.

Therefore, two approaches were proposed for the 1969-1970 evaluation of the Rural Child Care Project: (a) a narrowed focus on selected aspects of intellectual change in former Project participants and the involvement of Project parents in community and school activities and (b) a systematic study of the effectiveness of the child development center staff in stimulating intellectual, linguistic and general achievement functioning of children currently enrolled and in training parents to interact more effectively with their children in learning situations.

A major assumption underlying the current evaluation was that the approaches of the research and program components of the Rural Child Care Project can and should increasingly reflect a similar purpose, that of improving the effectiveness of services and training experiences offered to Project staff and families. While specific methods and concerns differ between these two Project components, it is no longer tenable to assume that their goals are mutually incompatible (Fishman, 1966). A primary aim of the proposed evaluation was to generate feedback to the Project staff as a means of providing a more objective basis for program implementation and revision.

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[1] In terms of the amount of training, relevant work experience, a reduction of the pupil per teacher ratio, implementation of a volunteer program and greater application of the unit teaching method in the centers.

LITERATURE REVIEW

The general observation that research on the effects of Head Start programs has yielded conflicting and difficult to interpret findings has become a truism in the current field of early education. Much of the confusion can be attributed to differences in the types of programs, populations and dependent variables sampled as well as the naive assumption that Head Start programs would have dramatic and uniform effects upon single measures such as the ubiquitous I.Q. A further source of difficulty has been the problem of assessing the short and long term effects of preschool programs for disadvantaged children. As Stern (1968) has pointed out, until the primary grades are better able to support and build upon gains established in preschool intervention programs it will be absurd to conclude that such programs are "failing" because initial gains dissipate after children enter public school. For the present, it seems the most meaningful evaluation of Head Start must focus upon changes produced while the child is still enrolled in the program and the means whereby changes are effected.

In a recent review of research on Head Start programs, O'Brien and Lopate (1968) conclude that "nontrivial" intellectual gains made by some Head Start children are related to the orientation of the program, the degree of emphasis upon language development and characteristics of the teacher. This review of current literature relevant to the 1969-1970 research evaluation of the Rural Child Care Project will focus upon these three aspects.

Most Head Start programs are influenced by a traditional nursery school orientation. They contain the same basic activities (e.g., free play, juice and story time) for young children during a full or half-day program. In addition, many programs have adopted what Lavatelli (1968) has called an inventory approach to the problems of the culturally disadvantaged child. That is, they have attempted to bring about improvement in vocabulary, number concepts, following instructions, independence and self-concept-areas in which disadvantaged children appear most deficient in comparison with advantaged children. Gains made in such inventory programs have been slight. As a general rule, contemporary demonstration and research programs for disadvantaged children suffer from diffuseness in curriculum and in measurement of curriculum effects (Fowler, 1968). The effect of such diffuseness in curriculum is perhaps the more serious since it undoubtedly has influenced the selection of measures for evaluation. The overuse of such measures as the Stanford-Binet Intelligence Scale, despite its proven predictive validity, has helped to obscure specific effects of preschool intervention. When intellectual gain occurs, there is some evidence that improvement is greater on performance than verbal items (i.e., on those items where the child was least deficient in the first place). Chesteen (1966) reports that children tested before and after Head Start experience on the Primary Mental Abilities Test improved most in perceptual speed and number facility while scoring consistently lowest in spatial relations. A non-deprived control group showed improvement in both spatial relations and verbal meaning over the same period of time without exposure to Head Start. Zigler and Butterfield (1968) have demonstrated that a major portion of intellectual gain shown by children exposed to a traditionally oriented preschool intervention program is attributable to motivational changes rather than to fundamental increases in cognitive ability. DiLorenzo and Salter (1968) found that Head Start children given special instructions in language showed the greatest gains on the Metropolitan Reading Readiness Test. Thus, it seems that without greater stress upon verbal and concept learning, and without the use of measures that give a more definitive picture of specific areas of functioning, uncertainty about the effects of Head Start programs and how to improve them will continue.

In accord with the inventory orientation of many Head Start programs, the Preschool Inventory (PI) (Caldwell, 1967) was devised to evaluate the achievement of Head Start children, before and after intervention, in those areas where they are found to be deficient, i.e., in vocabulary, sensory and number concepts, following instructions and personal-social awareness. Research with the instrument in various forms has produced varied findings. Hess, et al (1966) report that 1965 summer Head Start children did not differ significantly in terms of PI scores from non-Head Start participants. The significant correlation obtained between the Binet and PI prompted them to suggest its use as an alternative to the Binet in Head Start evaluations where testing time and trained personnel are at a minimum.[1] Starkweather (1966) found that children enrolled in preschool enrichment programs showed significantly greater gains than a control group on the Concept Activation and Personal-Social Responsiveness subtests of the PI. Studies by Pierce-Jones, et al (1966) report that measures of Head Start teacher characteristics and attitudes were predictive of changes in PI scores. In addition, these researchers found that summer Head Start children gained significantly on the PI and scored higher than non-Head Start first graders. For both groups of children, boys scored higher than girls on number concepts. The greatest variability on the PI was associated with the Personal-Social Responsiveness subtest, due apparently to large individual differences in the kinds of experiences that influence these tests. Krider and Petsche (1967) in another evaluation of the 1965 summer Head Start program found that both Head Start and non-Head Start participants gained significantly on the PI over time. The amount of gain shown by both groups was similar. There was some evidence to suggest that among the Head Start group only, children who scored lowest on the Binet (borderline defective range) made the greatest gains on the PI. One implication of such a finding, aside from the possibility it reflects a negative bias in the initial Binet test, is that some Head Start programs accomplish relatively more with the least adequate children than with brighter children. This conclusion, if valid, would indicate that future modification of preschool intervention programs must be in two directions; greater curriculum focus upon verbal and cognitive development and greater flexibility in content and method to serve the heterogeneous levels of functioning disadvantaged children represent.

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[1] Williams and Steward (1967) report substantially higher correlations between the PI and Binet MA than between the PI and Binet I.Q. In both cases, the correlations are significant, however.

There are growing numbers of programs for disadvantaged preschool children which are attempting to program concept learning sequences (Bereiter and Engelmann, 1966; Fowler, 1965; and Moore, 1963) and others are giving increasing attention to the dimensional details of simple concept learning (Deutsch, 1965; Gray and Klaus, 1965, 1968; Caldwell and Richmond, 1964; and Weikart, 1967). Such special procedures are typically imposed upon the traditional nursery school model and may occupy only a short portion of the total program. Bereiter and Englemann's (1966) program is something of an exception in its highly structured, "academic" orientation, but it has demonstrated that considerable gains can be made in linguistic and cognitive skills without necessarily hampering the emotional and social development of young disadvantaged children. Indeed, Kohlberg (1968) has reached a similar conclusion from a different vantage point, namely that the fostering of cognitive development is properly viewed as antecedent to the emergence of social and ethical functioning. Another structured program is the Perry School Project (Weikart, 1967) which, unlike many other programs, has been repeatedly and exhaustively studied. Intellectual gains have been demonstrated for three successive intakes of children and for as long as three years following participation. The program employed a verbal bombardment technique which, unlike the Bereiter and Englemann program, requires fewer high rate verbal responses from the child.

Many techniques are used to stimulate verbal expression and the learning of formal or standard English. Programs employ devices ranging from telephones and tape recorders to verbal reinforcement, creative experiences, special cognitive game activities and individual attention to correct diagnosed language problems (see Brottman, 1968, and Hess and Bear, 1968, for excellent reviews). While there is some dispute among linguists as to whether or not culturally disadvantaged children are actually deprived of a functionally complete language system, this issue is beside the point for educators faced with the high incidence of school failure among the disadvantaged and the correlated fact that such children score significantly below advantaged children on almost every measure of verbal ability, visual and auditory discrimination and other cognitive and perceptual skills closely related to successful performance of academic tasks (Stern, 1968).

The assumption made by many investigators that cultural deprivation is synonymous with language deprivation (Bereiter and Englemann, 1966) has many roots in psychological theory and findings. Russian psychology has accorded language mediation the principle role in cognitive development (Luria, 1961) and language in general a central role in the development of thought (Vygotskii, 1962). The seminal work of Jean Piaget (Flavell, 1963) has demonstrated the interdependence of language, intellectual and cognitive development. The findings of social class differences in language complexity between advantaged and disadvantaged adults and their children (Bernstein, 1961; Deustch, 1965; Hess and Shipman, 1965, 1968) and in verbal I.Q. studies (cf. Anastasi, 1958) support the emphasis placed upon including language stimulation in the preschool intervention curriculum.

Stodolsky (1965) found that four year old advantaged and disadvantaged Negro children who performed at a high level on a cognitive task also attained a criterion level of "adequate" language functioning on the Peabody Picture Vocabulary Test (PPVT). This finding suggests that cultural disadvantaged is a correlate rather than a cause per se of language deprivation. Other research on maternal teaching styles (Hess and Shipman, 1965, 1968) has demonstrated that a more likely cause of language deprivation is "a lack of cognitive meaning in the mother-child communication system." That is, the disadvantaged mother, through the use of a restricted language code, a status-oriented control system and an unstructured, impulsive approach to problem solving actually socializes her child for subsequent failure in academic settings. Among the interesting findings they obtained from this extensive investigation was that middle class and advantaged (urban Negro) mothers differed more on verbal than affective dimensions in their teaching effectiveness with their four year old children (Brophy, Shipman and Hess, 1965). This finding suggests that the focus of some preschool programs on affective relationships (i.e., theraputic nurturance) rather than upon language development and remediation is misdirected. In a recent series of studies, Bee et al (1969) obtained similar findings of social class differences in maternal teaching styles. It was apparent to these investigators that lower class mothers did not teach basic problem solving strategies that can be generalized to other situations, whereas middle class mothers provided a highly differentiated language structure which stimulated verbal mediation in their children.

Not all of those in the field of early education of the disadvantaged who agree that language deficit should represent a focal area of attack are willing to adopt highly structured approaches, such as those of Bereiter and Englemann (1965) in their programs. However, a recent review of those teacher characteristics associated with significant intellectual gain in young disadvantaged children (O'Brien and Lopate, 1968) would suggest that at minimum Head Start teachers must be recruited and/or trained who (a) place a high value upon intellectual activity, (b) have an abstract intellectual style (i.e., flexibility, tolerance of ambiguity and ability to place themselves in another's role), (c) focus upon communication of information while interacting with children (rather than upon play or enforcement of obedience) and who (d) actively intervene in the learning process.[1] While it has also been found that effective teachers possess qualities of warmth and supportiveness, these qualities should not be confused with nurturant play oriented permissiveness. These characteristics of an effective Head Start teacher are similar to those fostered by the controversial Bereiter (1966) approach. What is often overlooked about the Bereiter teacher is her effectiveness in getting children highly motivated to respond enthusiastically in a learning situation. There is evidence that her relationship with the children is positive and that these intensive interactions are geared to increase the child's sense of mastery (O'Brien and Lopate, 1968).

The problem of recruiting and training effective Head Start teachers is a chronic one for rurally based programs located far from colleges and universities where most structured programs and training methods are being developed. Lavatelli (1968), who is not in favor of the highly academic preschool approach, argues that teaching assistants in the program can be used in a more active role in language development. She suggests, along the lines developed by Marie Hughes at the University of Arizona, that aides be trained to "expand" the spontaneous verbalizations of the children and to make greater use of questions in order to direct children's thinking toward task situations and meaningful communication. She recommends that Head Start aides be made aware of the ways in which young children depart from standard English and that the teaching staff devise means of correcting individual deficits. This approach perhaps assumes more than is known about the nature of language development. Cazden (1968) found, for example, that the technique of verbal expansion was far less effective than that of adult modeling (i.e., where the adult provides a rich sample of standard English language) in promoting increased language functioning. Expansion alone restricts the richness of the available language to the level of the child's utterance. However, the use of questioning as a teaching technique is apparently related to teaching effectiveness (Jackson, Hess and Shipman, 1965).

In addition to the relative unavailability of highly trained teachers for rural Head Start programs, there is the difficult problem of effective training of the predominately non-professional staff. A study by Rubow (1968) is central to this problem. In a twelve week training program, thirty-two teacher aides working in Mississippi delta Head Start centers were exposed to one of three training methods. The aides averaged ten years of high school, a sixth grade reading level, and were approximately 35 years old. Those who experienced combined lecture and classroom participation gained most in the use of positive reinforcement with children and increased positive self attitudes. A comparison group that received no training showed a significant loss in information concerning child development and preschool curriculum, whereas the three experimental groups showed small but significant gains. The study noted that these non-professional aides seemed to benefit most from concrete teaching techniques. Other data indicated that there was a high correlation between teaching behavior ratings of these aides and their lead teachers. This study suggests that non-professional Head Start teachers can be trained to increase their effectiveness, but that concrete participation techniques must be utilized. Training should be carried out by those who are able to translate the objectives of language, intellectual and cognitive stimulation into behaviors and skills which can be taught to the non-professional teacher.

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[1] Comparisons between traditional nursery school oriented Head Start programs and Montessori oriented Head Start programs (in which the teacher does not actively intervene) have found that the traditionally oriented Head Start program is superior in producing intellectual gains if the primarily sensory approach of Montessori is not supplemented with direct verbal instruction from an actively intervening teacher (Kohlberg, 1968).

Along with growing concern about methods that can increase the teaching effectiveness of the non-professional staff and the type of curriculum they implement in a Head Start program, there is a related problem: the training of Head Start parents as participants in the educational process of their children. The studies of Hess and Shipman (1965, 1968) on maternal teaching styles have prompted them to conclude that the effects of cultural disadvantage may set limits upon the potential mental growth of the child unless an intervention program is instituted which re-socializes or re-educates the child and his family. There is evidence in the literature concerning the effectiveness of early language stimulation programs involving the mother. Irwin (1960) had working class mothers read stories to their preschool children 15 minutes a day and found after 18 months that the children had significantly increased their phonemic frequency over that of a control group. Fodor (1967) demonstrated a similar effect in a reading stimulation program which produced significant growth in vocabulary but not in the number of utterances or length of expression units. One result of working with mothers of disadvantaged preschool children may be to increase their sensitivity to the learning capacity of their children. Hess, et al (1966) note that disadvantaged mothers do not use the same criteria as classroom teachers in predicting their child's academic success. However, mothers whose children did well in school were more likely to evaluate their children in the same manner as the child's teacher.

Evidence that the training of disadvantaged mothers as teachers within the preschool setting increases their teaching effectiveness is found in research carried on by Gray (1968) and her associates (Gray, Miller, Hinze and Schoggen, 1967). The general design of this study involves participation by disadvantaged children in a structured preschool program, training of one group of mothers as teachers, and exposure of a third group of mothers to training at home by a visiting teacher. Mothers in all experimental groups have shown a significant gain on WAIS I.Q. with mothers receiving training in the preschools gaining more than any other group. In addition, 35% of this "Maximum Impact" group undertook continuing education, three moved out of the housing project into their own homes and two were employed as classroom aides in a summer Head Start program. As would be expected, children who attended the preschool program made greater gains on the Binet and PPVT than children who did not attend. However, younger siblings in homes where mothers were instructed in teaching methods by the visiting teacher or where the mother had been trained in the preschool setting scored significantly higher on a test of basic concepts (Gilmer, 1969) than younger siblings of children who attended preschool but whose mothers received no training.

Another preschool program related to earlier projects developed by Weikart, et al is involving parents in parent group work designed to foster achievement, inner control and cognitive development of their children (Kamii and Radin, 1967). Results are not yet available. The prospect of increased parent involvement and training in rural Head Start programs should be good considering the evidence that parents tend to be well represented on rural Policy Advisory committees (Chertow, 1968). Evaluation of such training efforts may well utilize structured or semi-structured situations for observing parent-child interactions in learning situations (Osofsky and Hunt, 1969; Hess and Shipman, 1965; Bell, 1964; Rosen and D'Andrade, 1969) in addition to I.Q. and attitudinal measures.

One of the benefits to be derived from a greater focus upon parent training through Head Start centers is the training experience it can afford the permanent, non-professional staff as well. As Weikart (1969) has recently pointed out, the results of his research comparing the effectiveness of various early education models clearly indicate that a primary function of any well defined curriculum is to organize the teachers efforts towards the attainment of program objectives. Therefore, teachers implementing early childhood programs need training in the use of structured, goal-related skills more than they need to be instructed about which program model is "best". This interesting conclusion advanced by Weikart suggests that a proper concern of Head Start evaluations is whether teachers are able to use teaching techniques to improve the intellectual, linguistic and social skills of young children. It also offers the reassurance that such concern with teaching processes per se can supercede concerns over the merits of given program models - concerns which have mainly produced divisive and non-productive ideological warfare within the early educator ranks without improving teacher adequacy within the broad spectrum of Head Start programs.

OBJECTIVES

The 1969-1970 evaluation of the Rural Child Care Project had six major objectives. These were: (a) to examine patterns of intellectual change shown by former Project children as a function of their initial intellectual status and promotion within the early grades; (b) to assess the relationship between exposure to child development and Project social services and subsequent intellectual functioning of former Project children in the first four years of public school; (c) to ascertain if the length and intensity of exposure to Project social services is related to awareness of and involvement in community and school activities evidenced by Project parents; (d) to determine the effectiveness of the child development centers in the training of Project mothers as teachers of young children; (e) to investigate the intellectual ability and teaching effectiveness of Project mothers in comparison with middle class mothers and Project teachers; and (f) to compare Project children with middle class and other disadvantaged children in terms of intellectual, linguistic, and achievement functioning.

The following hypotheses concerning the effects of participation in the Rural Child Care Project on disadvantaged parents and children were derived in part from the preceeding review of the literature and in part from informal observations and findings of previous evaluations of the Rural Child Care Project program (see Briscoe and Archambo, 1969). The 1969-1970 evaluation of the Rural Child Care Project included follow-up comparisons which represent extensions of earlier reasearch as well as new investigations focusing upon the current child development program.

> Hypothesis 1a: Children who previously attended a child development center for a minimal period of 60 days and who were tested on the Stanford-Binet Intelligence Scale (LM) for the first time while enrolled in a center and subsequently were readministered the Binet annually during their first four years of public school will show a greater overall gain in their intellectual performance if they scored above 80 on their initial test and are promoted to the fourth grade on schedule than a comparable group of former Project children who scored above 80 on their initial test and were subsequently retained at the end of first or second grade. These differences in I.Q. gain are expected to be greater during the first two years than the second two years of public school.
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> Hypothesis 1b: Children who previously attended a child development center for a minimal period of 60 days, who scored above 80 on their initial Stanford-Binet test and were subsequently promoted on schedule during their first four years of public school will show consistently higher performance on verbal subtests of the Stanford-Binet for each annual administration than a comparable group of former Project children who scored above 80 on their initial Stanford-Binet test and were subsequently retained at the end of first or second grade.

> Hypothesis 1c: Children who previously attended a child development center for a minimal period of 60 days and who have shown a subsequent gain in performance on the Stanford-Binet Intelligence Scale during their first four years of public school will show a consistently higher performance on verbal subtests of the Stanford-Binet than a comparable group of former Project children who have shown a subsequent loss in performance on the Stanford-Binet Intelligence Scale since entering public school.

Underlying Hypothesis 1a was the assumption that among those Project children who scored above 80 on their initial Stanford-Binet while enrolled in a child development center, I.Q. loss during the first year of public school was directly related to circumstances resulting in retention at the end of first grade.[1] Therefore, it was predicted that overall differences in I.Q. gain between retained and regularly promoted children above 80 on their initial Stanford-Binet will tend to disappear by the time both groups of children have completed four years of public school. It was assumed that the effects of retention were beneficial to retained children and that their pattern of intellectual gain in the second two years of public school would not differ significantly from that of regularly promoted children.

Follow-up testing of retained and regularly promoted children who scored initially below 80 on the Stanford-Binet was also done to determine if retained children scored significantly lower on their fifth Stanford-Binet than regularly promoted children; whether children who scored below 80 on their initial Stanford-Binet were significantly lower in Stanford-Binet performance at the end of fourth grade than those whose initial I.Q. scores were above 80; and if there was an interaction effect involving grade placement status and initial I.Q. level. It was of interest to assess I.Q. change over four years of public school (as a function of these variables) as a follow-up of an earlier assessment based upon the first three years of public school (see Archambo and Briscoe, 1970).

The purpose in testing Hypotheses 1b and 1c was to determine if a qualitative distinction could be made between the intellectual performance of Project children who have shown patterns of intellectual gain or loss since entering public school. Hypothesis 1b examines the Stanford-Binet performances of children who initially scored above 80 and who were either retained early in public school or promoted on schedule. Although these two groups of children scored above 80 initially and did not differ significantly in terms of total I.Q., it is possible that subsequent differences in total I.Q. scores and in I.Q.

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[1] One child in the "Initial I.Q. Above 80 - Retained Group" was retained at the end of second grade. It was not expected that any children in this group would be retained at the end of third grade.

gain (see Briscoe and Archambo, 1969) are attributable in part to qualitative differences in performance on Binet subtests. Hypothesis 1c examined this possibility in the sample of Project children administered follow-up Stanford-Binet tests over the past four years according to overall I.Q. change.

> Hypothesis 2a: Children who previously attended a child development center for a minimal period of 60 days and who maintained or showed a gain in performance on the Stanford-Binet during their first year of public school will have experienced significantly more exposure to the child development program than a comparable group of children who showed a decrement in performance on the Stanford-Binet during their first year of public school. There will be no relationship between overall intellectual gain during the first four years of public school and total child development center attendance, however.

> Hypothesis 2b: Families of children who previously attended a child development center for a minimal period of 60 days, who were tested initially on the Stanford-Binet Intelligence Scale while enrolled in a center and who subsequently maintained or increased their performance on the second administration of the Stanford-Binet at the end of first grade received more intensive homemaking or combined social work and homemaking services during their children's participation in the Project than families of a comparable group of children who showed a loss in I.Q. scores during first grade.

> Hypothesis 2c: Families of children who previously attended a child development center for a minimal period of 60 days and who have maintained or increased their performance on the Stanford-Binet during the first four years of public school received routine social contact services only or minimum homemaking or combined social work and homemaking services whereas families of a comparable group of children who have shown a decrement in their performance on the Stanford-Binet during the same time period received more intensive homemaking or combined social work and homemaking services while their child was enrolled in a center.

Hypotheses 2a-2c were designed to determine whether there is a relationship between I.Q. change shown by former Project children after they enter public school and the amount of exposure they had to the child development center (CDC) and to Project social work and/or homemaking services. Evidence from earlier evaluations of the Rural Child Care Project (Briscoe and Archambo, 1969) indicates that CDC attendance prior to the initial administration of the Stanford-Binet and CDC attendance during the interim between first and second Binet administrations were not related to I.Q. change. However, no analyses were performed on the effect of total CDC attendance upon I.Q. change, especially during first grade when such an effect should be maximized. In addition, no analyses have been done to date on the effect of the intensity and kind of Project social services upon subsequent I.Q. change in Project children on a short and long term basis.

The effects of Project social services upon the involvement of Project parents in their communities and in the educational experiences of their children is the focus of Hypotheses 3a-3c. Implicit in the foregoing hypotheses (2a-2b) and in Hypotheses 3a-3c are the assumptions that Project families designated for homemaking or combined social work and homemaking services receive the most intensive exposure to Project services, are those judged to be the most isolated from their communities, are least able to cope (or most burdened) with problems of health, basic subsistence and obtaining an adequate education and are least knowledgeable of ways to obtain assistance from community agencies.[1] It is also assumed, based upon earlier research (Briscoe and Archambo, 1969), that social work and homemaking services overlap to a great extent and are not clearly distinct in terms of their effects upon Project families. Therefore, designation of a family to receive one or both types of Project services reflects that family's degree of inadequacy or need and does not mean it will receive service which is distinct (apart from intensity of contact) from that received by other families with a different Project service designation. However, because of distinctions in the focus of social work and homemaking services in terms of community involvement, it is possible to predict differences between Project family groups as specified in the following hypotheses:

> Hypothesis 3a: Parents of children who have attended a child development center for a minimal period of 100 days and whose families have received a minimum of one year of Project social work, homemaking or combined social work and homemaking services will be significantly more aware of community resources, more assertive in contacting community agencies, higher in their educational aspirations for themselves and their children and evidence more concrete recent achievements in these areas, express more favorable attitudes toward involvement in community, school and Project-related programs and evidence more concrete recent achievement in these areas than a comparable group of newly-enrolled Project parents whose children have attended a child development center for a maximum period of 60 days and who have experienced a maximum of four months of Project social services.
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> Hypothesis 3b: Among those parents of children who have attended a child development center for a minimal period of 100 days and whose families have received a minimum of one year of Project social work, homemaking or combined social work and homemaking services, those parents who have received social work "contact" services will be significantly higher on the above measures than a group of comparable parents who have received homemaking or combined social work and homemaking services during the same period.

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[1] It is not assumed that families receiving intensive services are those least motivated to change or seek solutions since designation of a family for Project services is possible only if the family agrees to accept the services cooperatively.

> Hypothesis 3c: Among those parents of children who have attended a child development center for a minimal period of 100 days and whose families have received a minimum of one year of Project homemaking or combined social work and homemaking services, those parents who have received combined social work and homemaking services will be significantly higher on the above measures than those parents who have received homemaking services only.

Hypothesis 3a was designed to determine if the length of expsoure to Project social services in general can account for differences among Project families in terms of their participation in community and school activities. Hypothesis 3b is based upon the assumption that the more adequate families who are assigned routine social work "contact" services will be more involved in community and school activities than less adequate families given more intensive exposure to Project services. Within the comparisons outlined in Hypothesis 3c, however, a distinction was drawn between two groups of less adequate families in predicting that those receiving the most intensive combined assistance from homemakers and social workers would be more aware of and involved in community and school-related activities than those families receiving only homemaking services.

The following hypotheses focused upon an evaluation of the effectiveness of the child development center staff in training Project mothers to be more effective teachers of young children[1] and in enhancing the intellectual, linguistic and general achievement functioning of Project children. Provision was made to obtain comparison data on a group of middle class mothers and their children and from other disadvantaged children.

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[1] This aspect of the 1969-1970 evaluation of the Rural Child Care Project was proposed to stimulate improvement in as well as to evaluate the effectiveness of the center volunteer program. It was part of a joint effort of the Research and Project staffs to encourage greater involvement and training of parents in the child development centers. It was anticipated that this evaluation would have an impact upon the planning of training experiences for mothers (and fathers) in the centers and, with the assistance of Home Visiting Teacher consultants from the Demonstration and Research Center for Early Education at Peabody College, Nashville, Tennessee, such training experiences would be extended into the homes through Project Homemakers and Social Workers.

Hypothesis 4a: Mothers of families newly enrolled in the Project will score significantly lower on the Wechsler Adult Intelligence Scale (WAIS) than a comparison group of middle class mothers indigenous to eastern Kentucky. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, Project mothers will show a significant increase in Performance Scale I.Q. scores on WAIS post-test. They will still score significantly lower than the middle class mother comparison group tested initially, however.

Hypothesis 4b: Whereas child development center Teachers will score significantly higher on the WAIS than newly enrolled Project mothers, they will score significantly lower than a comparison group of middle class mothers indigenous to eastern Kentucky. Newly enrolled Project mothers, following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, will still score significantly lower on WAIS post-test than child development center Teachers, but only on the Verbal and Total Scales.

Hypotheses 4a and 4b were designed to compare the level of intellectual functioning of Project mothers with those of middle class mothers and Project Teachers, two important reference groups for evaluating the effectiveness of the child development program in encouraging the participation of Project mothers in the education of their children. It is assumed that values and behaviors promoted in the centers reflect a somewhat "middle class" orientation toward child education; further, it is assumed that the Project Teachers serve as role models of this orientation. Because Project Teachers represent a "non-professional" group which socioeconomically and educationally falls between the levels attained by Project families and middle class families, it is of importance to determine if the same is true of their intellectual level. Other research has suggested (see Gray, 1968) that significant change in WAIS performance of disadvantaged mothers participating in preschool intervention programs is more likely on Performance than Verbal Scale I.Q. scores, either as a function of gaining a more systematic perceptual orientation and reduced anxiety in the test situation.

Hypothesis 5a: Mothers of families newly enrolled in the Project will be significantly more status-oriented in their attitudes toward the education of young children and involvement with school personnel and they will be significantly lower in educational aspirations for themselves and their children in comparison to middle class mothers indigenous to eastern Kentucky and to child development center Teachers. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, Project mothers will be significantly more person and instructive-oriented in their attitudes toward the education of young children and involvement with school personnel and they will significantly increase their educational aspirations for themselves and their children.

Hypothesis 5b: Mothers of families newly enrolled in the Project and who receive training as a Teacher Aide Volunteer will not differ initially in their attitudes toward the education of young children, involvement with school personnel, or in educational aspirations for themselves and their children in comparison to a comparable group of mothers who receive training as volunteers in capacities other than Teacher Aides. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure to their families to Project social services, these mothers will show significantly greater person and instructive orientation in their attitudes toward the education of young children and involvement with school personnel and they will be significantly higher in their educational aspirations for themselves and their children than those mothers who did not receive training as a Teacher Aide Volunteer.

Hypotheses 5a-5b provided for comparisons between Project mothers, Project Teachers and a middle class group of mothers in terms of their orientation and attitudes toward education which other investigators, principally Hess and Shipman (1965, 1968), have found to be related to an elaborated language code and effective teaching style. It was predicted that exposure to volunteer experiences in the child development center, and especially to supervised training as a Teacher Aide, would be instrumental in changing the orientation and attitudes of Project mothers from a restricted outlook to a more aspiring and verbally elaborated (or instructive) approach. It was of concern to determine if the predicted changes would be modified as a function of the mother's marital and welfare status since the Rural Child Care Project serves families who vary considerably in family status characteristics.[1]

Hypotheses 6a-6c extended the evaluation of Project Teachers and Project mothers to an assessment of teaching styles and effectiveness in a semi-structured task situation. The actual performance of Project mothers in teaching their own children was compared to the performance of middle class mothers with their own children and to that of Project Teachers with other, comparable Project children:

> Hypothesis 6a: Mothers of families newly enrolled in the Project will be significantly less effective in a semi-structured task situation in comparison to middle class mothers indigenous to eastern Kentucky and to child development center Teachers; that is, they will use less positive reinforcement, more non-constructive negative criticism, give less task information, ask fewer questions of the child, offer less general encouragement, and use more imperatives than instructives when teaching their child a series of simple tasks. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, these mothers will show a significant increase in teaching effectiveness toward the level initially displayed by middle class mothers and the level displayed on post-test by child development Teachers; that is, they will use more positive reinforcement, more constructive negative criticism, give more task information, ask more questions of the child, offer more general encouragement, and use more instructives than imperatives when teaching their children a similar series of simple tasks.

> Hypothesis 6b: Child development center Teachers will be significantly more effective in teaching a series of simple tasks to Project children than newly enrolled Project mothers who are asked to teach the same tasks to their children, but they will be less effective than a comparison group of middle class mothers indigenous to eastern Kentucky. Following six months of intensive training experience with Project mother

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[1] It was not known if mothers recruited as volunteers in the centers would vary sufficiently in these characteristics to warrant such comparisons since many Project mothers receiving AFDC participate in the WIN program or are unable to spend time in the centers due to baby-sitting and transportation problems.

volunteers, child development Teachers will show significant improvement in their teaching effectiveness, especially in terms of increased verbal elaboration.

> Hypothesis 6c: Mothers of families newly enrolled in the Project and who receive training as Teacher Aide Volunteers will not differ initially in their teaching effectiveness in comparison to a comparable group of mothers who receive training as volunteers in capacities other than Teacher Aides. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, these mothers will show significantly greater improvement in teaching effectiveness, especially in terms of increased verbal elaboration, in comparison to those Project mothers who did not receive training as Teacher Aide Volunteers.

Hypotheses 6a-6c were derived in part from the work of Hess and Shipman (1965 and 1968) and their coworkers (Jackson, Hess and Shipman, 1965; Brophy, Shipman and Hess, 1965) in studies of maternal teaching styles, although an attempt has been made to adapt and simplify aspects of their approach to the problems of testing a rural disadvantaged sample. The measures chosen to evaluate these hypotheses will be stressed in the center experiences of Project mothers trained as Volunteer Teacher Aides. It is assumed that if Project Teachers participate in a six month training experience with Project mother volunteers their verbal teaching skills will increase as well. Although Project mothers serving in capacities other than that of Teacher Aide will be exposed to the teaching philosophy and behavior of the center staff, it is predicted that without specific, directed teaching experiences they will not show the amount of improvement in verbal teaching skills that Volunteer Teacher Aides are expected to manifest.

The next two hypotheses permitted intelligence test comparisons between Project children and a middle class comparison group, and between groups within the total sample of Project children:

> Hypothesis 7a: Children newly enrolled in the child development centers will score significantly lower on the Wechsler Preschool and Primary Scale of Intelligence (WPPSI) than a comparison group of middle class children indigenous to eastern Kentucky. Following six months of intensive exposure to the Project, including minimum attendance of 60 days in a child development center, participation by their mothers as volunteers in the centers, and exposure of the family to Project social services, these children will show a significant gain on all scales of the WPPSI. They will still be significantly lower on the Verbal Scale of the WPPSI than the middle class comparison group tested initially, however.

> Hypothesis 7b: Children newly enrolled in a child development center and whose mothers receive training as Teacher Aide Volunteers will not differ initially on any scales of the WPPSI from a comparable group of children whose mothers receive training as volunteers in capacities other than Teacher Aides. Following six months of intensive exposure to the Project, including minimum attendance of 60 days in a child development center, participation by their mothers as volunteers in the centers and exposure of the family to Project social services, these children will score higher on the Verbal and Total Scales of the WPPSI than those children whose mothers did not receive training as Teacher Aide Volunteers.

The basic assumption underlying Hypothesis 7a is that Project children who experience the combined aspects of the child development program, social services, and the training of their mothers in the volunteer program will show a significant increase on all scales of the WPPSI after six months. Hypothesis 7b specifically points to the training of the mother as a teacher of small children as the most critical program aspect in producing an increase in Verbal Scale I.Q. scores which are predictive of later school success. The possibility exists that initial intellectual gains shown by Project children in response to the child development program would be related to the intactness and economic viability of their families. This was to be investigated if sufficient mother volunteers who vary in terms of these characteristics are recruited for the Project mother sample.

Hypotheses 8a-8b were designed to compare the performance of Project and middle class children on a series of simple tasks apart from and in relationship to the teaching effectiveness of their mothers and Project teachers.

> Hypothesis 8a: Children newly enrolled in the child development centers who are taught a series of simple tasks by their mothers will make significantly more errors, fewer correct responses, and be less able to verbalize the learning principles than a comparable group of children taught by child development center Teachers or a comparison group of middle class children indigenous to eastern Kentucky taught by their mothers. Following six months of intensive exposure to the Project, including minimum attendance of 60 days in a child development center, participation by their mothers as volunteers in the centers and exposure of their families to Project social services, these children will show significant improvement in their task performance and ability to verbalize the learning principles. Their performance will still be lower than that of the middle class children initially tested. These children will not differ from comparable children taught by child development center Teachers on post-test in terms of errors, but they will be significantly less able to verbalize the learning principles.

Hypothesis 8b: Children newly enrolled in the child development centers and whose mothers receive training as Teacher Aide Volunteers will not differ initially in their task performance when taught by their mothers from a comparable group of children whose mothers receive training as volunteers in capacities other than Teacher Aides. These children will perform less well than a comparable group of children taught the tasks by child development center Teachers. Following six months of intensive exposure to the Project, including minimum attendance of 60 days in a child development center, participation by their mothers as volunteers in the centers and exposure of their families to Project social services, these children will perform as well as comparable children taught the task on post-test by child development center teachers and they will perform significantly better, especially in verbalizing the learning principles, than comparable children taught by their mothers who did not receive training as Teacher Aide Volunteers.

The assumption underlying Hypotheses 8a-8b was that, as predicted before in terms of intellectual change, Project mothers who were exposed to child development center activities and procedures would increase in their effectiveness as teachers. This change was expected not only in behaviors of the mother, but in the criterion performance of her child. However, these effects may have been modified by general socioeconomic status variables so that improvement was not expected to reach the levels attained by the middle class comparison group. The most interesting expectation was that Project children presented a series of tasks by their mothers (who have been taught how to function as teachers in learning situations with young children) would perform as well on these tasks as similar children taught by Project Teachers. Such a finding, if obtained, would not mean necessarily that Project mothers trained as Volunteer Teacher Aides for six months are qualified to replace Project Teachers. It would demonstrate that Project mothers are capable of acquiring specific skills during a six month training period that relate to the learning performance of their children in a semi-structured task situation. This finding would have implications for the development of future programs within the Project to train parents in the centers and at home to interact more effectively in a teaching capacity with their preschool children.

As a means of further evaluation of the center volunteer program, child development Teachers and Project mothers participating as volunteers in the centers were administered short oral interviews regarding their attitudes toward the volunteer program.

> Hypothesis 9: Child development center Teachers will be less favorable toward the use of Project mothers as Teacher Aide Volunteers before than after a six months period of intensive volunteer training. Positive evaluation of their volunteer experience and willingness to continue as center volunteers is expected to be greater among Project mothers trained as Teacher Aide Volunteers than among those trained in other volunteer capacities and, within the Teacher Aide Volunteer group, among those mothers who show the greatest gains on teaching style variables.

Hypothesis 9 was based upon the assumption that the presence of volunteers in the centers presents a problem to the center staff since they have to find tasks suitable for volunteers and attempt to supervise them. One of the expected benefits of introducing an intensive volunteer training program, which involved the assistance of Project county personnel, was to resolve these problems by relating what the volunteers do to the teaching efforts of the Project Teachers and to other basic activities in the centers (such as meal preparation) in a more systematic fashion. Furthermore, it was expected that the reaction of Project mothers trained as Teacher Aides to their volunteer experience would be related to the amount of progress they showed and that those mothers receiving more individualized attention in the teaching of young children (i.e., Teacher Aide Volunteers) would value this experience more highly than mothers receiving a more general exposure to the centers.

The focus of the final set of hypotheses proposed for the 1969-1970 research evaluation of the Rural Child Care Project was upon language and achievement comparisons between Project children who varied in terms of age and amount of exposure to the child development program, and upon achievement comparisons between Project children, other disadvantaged children, and middle class children prior to their entrance into public school.

> Hypothesis 10: Children enrolled in the Project for a minimum of one year and who have attended a child development center for a minimum of 130 days will score higher on the UCLA Language Tests (Stern, 1968) than a comparable group of children enrolled in the Project for a maximum of six months and who have attended a child development center for a maximum of 80 days. Both groups of children will perform best on tests measuring verbal output and lowest on tests assessing expressive vocabulary, comprehension of concepts of position, conjunction, disjunction, negation and tests requiring verbal mediation.

The rationale underlying Hypothesis 10 was that longer exposure to the child development center two year curriculum as presently constituted would increase language production or verbal output but not the use of language forms most closely related to cognitive behavior. Research on the effects of highly structured, linguistically-oriented preschool programs for disadvantaged children (Bereiter and Englemann, 1966) indicates that improvement in the mediational or information processing functions of language can only be expected if the curriculum is highly structured in these areas. Since the Project teaching staff is composed of persons without training in structured language-oriented programs, and because they share many sub-cultural language patterns characteristic of Project families, it was assumed that they are effective only in increasing the overall verbal output of Project children.[1] It was also of interest to determine if children benefited from two years of Project experience in terms of the development of language skills.[2]

> Hypothesis 11a: Children enrolled in the Project for a minimum of one and one-half years and who have attended a child development center for a minimum of 150 days will score higher on the Preschool Inventory (Caldwell, 1967) than a comparable group of children enrolled in the Project for a maximum of nine months and who have attended a child development center for a maximum of 100 days. Both groups of children will score highest on the Personal-Social Responsiveness subtest and at the lowest level on the Concept Activation subtests.
>
> Hypothesis 11b: Children enrolled in the Project for a minimum of one and one-half years and who have attended a child development center for a minimum of 150 days will score higher generally on the Preschool Inventory than a group of children of the same age enrolled in summer Head Start. However, they will score significantly lower than a group of middle class children of the same age who are indigenous to eastern Kentucky, especially on the Concept Activation subtests.

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[1] A recent review of the child development center program (Archambo and Briscoe, 1970) indicated that emphasis on language skills centers upon reinforcing production, story telling and simple labeling activities. Language as a cognitive and information processing activity is not stressed. While formal English is not "preferred" over Appalachian dialects, it does represent a criterion for information processing because of its emphasis on verbal elaboration and abstract concepts.

[2] Although most children enrolled in the Project attend a child development center for two years (from four to six years of age) some attend for only a year because they enter late or drop prematurely from the program. Previous evaluations have not determined if children in their second year of Project experience receive qualitatively different instruction than that offered them in their first year.

The Preschool Inventory (Caldwell, 1967) is designed to assess general readiness for first grade. Hypotheses 11a-11b predicted that performance on the Preschool Inventory (PI) would be related to age, socioeconomic status and, within the more disadvantaged rural group, to the type of preschool intervention experience. Specifically, it was predicted that children who differed in age and length of exposure to the child development program would differ in overall PI scores but not in terms of the pattern of their performance on the subtests. It was further predicted that overall performance on the PI would vary as a function of the amount of preschool experience of disadvantaged children of the same age, that is, children about to enter first grade who have experienced only summer Head Start are not expected to do as well on the PI as children of the same age who have been enrolled in a child development center for almost two years. Both Project and summer Head Start children are expected to perform less well on the PI than middle class children of the same age. Finally, Project children and summer Head Start children are expected to perform highest on the Personal-Social Responsiveness subtest and lowest on the Concept Activation subtests of the PI.

Early studies of the PI (Hess et al, 1966) found that it correlates highly with Stanford-Binet I.Q. scores. Therefore, the relationship between PI scores and WPPSI Verbal and Performance I.Q. scores was determined for Project children and the middle class comparison group. In addition, the possibility of sex differences in performance on the WPPSI, the UCLA language tests and the PI was investigated.

FINDINGS

I. Hypotheses 1-2: Intellectual Functioning of Former Rural Child Care Project Participants. Follow-Up Comparisons.

Hypothesis 1a states that,

> "Children who previously attended a child development center for a minimal period of 60 days and who were tested on the Stanford-Binet Intelligence Scale (LM) for the first time while enrolled in a center and subsequently were readministered the Binet annually during their first four years of public school will show a greater overall gain in their intellectual performance if they scored above 80 on their initial test and are promoted to the fourth grade on schedule than a comparable group of former Project children who score above 80 on their initial test and were subsequently retained at the end of first or second grade. These differences in I.Q. gain are expected to be greater during the first two years than the second two years of public school."

Hypothesis 1b states that,

> "Children who previously attended a child development center for a minimal period of 60 days, who scored above 80 on their initial Stanford-Binet test and were subsequently promoted on schedule during their first four years of public school will show consistently higher performance on verbal subtests of the Stanford-Binet for each annual administration than a comparable group of former Project children who scored above 80 on their initial Stanford-Binet test and were subsequently retained at the end of first or second grade."

Hypothesis 1c states that,

> "Children who previously attended a child development center for a minimal period of 60 days and who have shown a subsequent gain in performance on the Stanford-Binet Intelligence Scale during their first four years of public school will show a consistently higher performance on verbal subtests of the Stanford-Binet than a comparable group of former Project children who have shown a subsequent loss in performance on the Stanford-Binet Intelligence Scale since entering public school."

Hypothesis 2a states that,

> "Children who previously attended a child development center for a minimal period of 60 days and who maintained or showed a gain in performance on the Stanford-Binet during their first year of public school will have experienced significantly more exposure to the child development program than a comparable group of children who showed a decrement in performance on the Stanford-Binet during their first year of public school. There will be no relationship between overall intellectual gain during the first four years of public school and total child development center attendance, however."

Hypothesis 2b states that,

> "Families of children who previously attended a child development center for a minimal period of 60 days, who were tested initially on the Stanford-Binet Intelligence Scale while enrolled in a center and who subsequently maintained or increased their performance on the second administration of the Stanford-Binet at the end of first grade received more intensive homemaking or combined social work and homemaking services during their children's participation in the Project than families of a comparable group of children who showed a loss in I.Q. scores during first grade."

Hypothesis 2c states that,

> "Families of children who previously attended a child development center for a minimal period of 60 days and who have maintained or increased their performance on the Stanford-Binet during the first four years of public school received routine social contact services only or minimum homemaking or combined social work and homemaking services whereas families of a comparable group of children who have shown a decrement in their performance on the Stanford-Binet during the same time period received more intensive homemaking or combined social work and homemaking services while their child was enrolled in a center."

METHOD

The general method for the evaluation of these hypotheses consisted of administering the Stanford-Binet Intelligence Scale (Form L-M) for the fifth consecutive year to a sample of former Project children presently enrolled in their fourth year of public school who were initially tested on the Binet while enrolled in a Rural Child Care Project child development center. These data, as well as test results from previous years (see Briscoe and Archambo, 1969, and Archambo and Briscoe, 1970, for previous follow-up findings) were then analyzed for patterns of intellectual change over the past five years.[1]

Subjects

In January of the current evaluation year, the whereabouts of the 36 former Project participants who have been tested annually since they entered public school four years ago were ascertained. Thirty-five of these children were located, twelve of them currently enrolled in third grade because they were retained one year in first or second grade,[2] and the remaining twenty-three children having been promoted on schedule to the fourth grade. One child, a boy (retained), was unavailable for testing this year since his family has moved out of state.

All of the thirty-five available children were subsequently scheduled for their fifth administration of the Binet and duly tested during the period of March 23 - April 1, 1970. Table 1 presents a summary of the follow-up sample according to county of residence, grade placement status (promoted or retained) and sex of child.

Instruments

The Stanford-Binet Intelligence Scale, 1960 revision (Form L-M) was administered individually, according to standardized procedures, to each child. Mrs. Allie Hendricks, a certified psychometrist, administered each test.

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[1] Mrs. Allie Hendricks, a certified psychometrist, in addition to testing all children for the third consecutive year in this follow-up study, also assisted in formulation of the design for Hypotheses 1a and 1b and in the analysis and interpretation of the data used to evaluate those hypotheses.

[2] One retained child (a boy) is enrolled in a special education class for fourth grade age level pupils.

TABLE 1: HYPOTHESES 1-2: FOLLOW-UP ADMINISTRATION OF THE STANFORD-BINET INTELLIGENCE SCALE. FORMER PROJECT PARTICIPANTS TESTED IN 1969-1970 ACCORDING TO COUNTY, GRADE PLACEMENT STATUS, AND SEX OF CHILD

	Grade Placement Status			
	Fourth Grade Group		Third Grade Group (Retained)	
COUNTY	Male	Female	Male	Female
Elliott	2			
Knott	2	3	2	1
Lee	2	2	1*	
Magoffin	2	4	1	2
Morgan		1		
Owsley	2	1	1	
Wolfe		2	3	1
Totals:	10	13	8	4

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*Child is enrolled in Special Education Class.

For the purpose of classifying Binet item scores into various categories in order to evaluate Hypotheses 1b and 1c, a classification system developed by Valett (1965) was utilized. This "Profile for the Stanford-Binet (L-M)" (see Appendix A for a summary of the profile categories) was initially published to aid clinicians, lay persons and students to obtain more information on individual differences in Binet performance than is possible when total Binet I.Q. score or M.A. score is used as the sole index of intellectual functioning. The profile was developed on the basis of theoretical constructs derived from the work of Binet, Thurstone, Guilford and others as well as on the basis of judgements made by experienced clinicians. A total of six (in many instances overlapping) categories comprise the Valett profile: General Comprehension, Visual-Motor Ability, Arithmetic Reasoning, Memory and Concentration, Vocabulary and Verbal Fluency, and Judgement and Reasoning. It was concluded that this system afforded a greater opportunity to discern qualitative differences in Binet performance than the "verbal-performance" distinction implied in Hypotheses 1b and 1c.

Procedure

Arrangements for the fifth follow-up administration of the Binet were coordinated with the Rural Child Care Project county offices in the seven counties where testing was to be done. Great effort was made to limit the amount of travel required to test these children. Wherever feasible, arrangements were made to bring children to a centrally located school for testing. Testing was done individually in a private room provided in each of the public schools selected as testing sites. All children were seen during normal school day hours. Because these children have been seen by Mrs. Hendricks consistently over the past three years it is thought that these follow-up data are of considerable value in charting the pattern of intellectual change in former Project participants, despite the lack of a control group.[1]

RESULTS

Hypothesis 1a

It was predicted that former Project children who scored above 80 on their initial Binet (administered while they were still attending a child development center) and who were subsequently promoted on schedule throughout the first four years of public school would show a greater overall gain in intellectual functioning than comparable children who were subsequently retained in first or second grade. In addition, it was expected that this difference in I.Q. score gain (change) would be greater during the first two years of public school than in the second two years.

In order to assess these predictions, those children who had scored above 80 on their initial Binet were selected from the present sample and divided into two groups, promoted (N=20) and retained (N=6). Three sets of dependent variables were then computed for these two groups: (a) a difference score based upon I.Q. change between first and third administrations ($IQ_3 - IQ_1$), (b) a difference score based upon I.Q. change between third and fifth administrations ($IQ_5 - IQ_3$), and (c) a difference score representing overall I.Q. change from first to fifth administrations ($IQ_5 - IQ_1$). Promoted and retained former Project participants were then compared by means of the two sample t-test for independent samples on each of the above variables. The chosen level of significance for these and all subsequent analyses reported was $p<.05$.

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[1] At the time the present follow-up sample was constituted no non-Project control group could be secured. Unlike many urban areas where it has been relatively easy to locate and retain contact with a comparison non-preschool sample, it was virtually impossible to secure cooperation from isolated rural families who were not benefitting from the Project and were understandibly hostile toward the idea of having their children tested for reasons they did not understand.

Table 2 presents the raw score I.Q.'s for these children over the past five administrations (four years) along with their chronological ages at testing. Table 3 presents a summary of the difference scores used as the basis of comparison between the promoted and retained groups specified in Hypothesis 1a. The results of t-test analyses indicated that Hypothesis 1a is partially supported. That is, promoted children showed a smaller loss in I.Q. scores than retained children when overall change is assessed ($t = 2.26$, $df = 24$, $\rho < .025$, one-tailed test) and when change during the first two years of school is assessed ($t = 2.43$, $df = 24$, $\rho < .025$, two-tailed test). There are no significant differences between these groups when I.Q. change during the second two years of public school is the dependent variable ($t = .58$, $df = 24$, ρ = ns). However, in all cases but one (see Table 3) the mean difference scores for each group indicate that I.Q. change was negative rather than positive. That is, promoted children have not shown clear gains as compared to retained children; they have merely shown a smaller tendency to lose I.Q. points following their initial testing while participating in the Project.

TABLE 2: HYPOTHESIS 1a: I.Q. SCORES OVER FIVE ANNUAL ADMINISTRATIONS OF THE STANFORD-BINET INTELLIGENCE SCALE. FORMER RURAL CHILD CARE PROJECT PARTICIPANTS, PROMOTED OR RETAINED, WITH INITIAL I.Q. SCORES ABOVE 80

	Promoted, IQ Above 80, N=20		Retained, IQ Above 80, N=6	
	Mean	SD	Mean	SD
CA_1 (in months)	65.90	6.32	62.67	2.07
IQ_1	95.50	12.25	93.83	10.42
CA_2	78.95	3.19	76.33	3.78
IQ_2	98.10	14.18	83.00	13.61
CA_3	92.15	3.18	89.83	3.76
IQ_3	95.15	13.93	81.17	11.02
CA_4	103.35	3.03	100.67	3.14
IQ_4	93.10	11.34	83.33	9.81
CA_5	116.65	3.12	114.17	3.60
IQ_5	93.60	12.10	81.67	9.48

TABLE 3: HYPOTHESIS 1a: I.Q. CHANGE OVER FIVE ANNUAL ADMINISTRATIONS OF THE STANFORD-BINET INTELLIGENCE SCALE. FORMER PROJECT PARTICIPANTS, PROMOTED OR RETAINED, WITH INITIAL I.Q. SCORES ABOVE 80

	Promoted IQ Above 80 (N=20)		Retained IQ Above 80 (N=6)	
	Mean	SD	Mean	SD
$IQ_3 - IQ_1$*	-.35	9.87	-12.67	12.23
$IQ_5 - IQ_3$	-1.55	7.20	+.50	7.84
$IQ_5 - IQ_1$*	-1.90	9.56	-12.17	8.70

* $\rho<.025$.

It was of interest to determine if there were any significant differences on the fifth administration of the Binet associated with grade placement status (promoted versus retained) and initial I.Q. level (above 80 or 80 and below) for the entire follow-up sample of 35 children. The last two follow-up evaluations of the Rural Child Care Project (Briscoe and Archambo, 1969; Archambo and Briscoe, 1970) have reported significant effects associated with both variables between first and second Binet administrations (with a larger sample) and associated with grade placement status only when IQ_3, IQ_4, and change between first and fourth Binet administrations were the dependent variables. That is, children who have been promoted tend to score higher and show smaller loss in I.Q. scores on successive administrations than children who have been retained.

To check on these effects using data available for the fifth Binet administration, 2 x 2 analyses of covariance (linear hypothesis model) were performed[1] with grade placement status and initial I.Q. level as the independent variables. Dependent variables were IQ_5 and $IQ_5 - IQ_1$. Covariates included chronological age at testing (or at baseline testing), total attendance at a child development center, and, where I.Q. change was the dependent variable, baseline I.Q.

The effect of grade placement status was significant ($\rho<.05$) when IQ_5 was the dependent variable. No significant effects were obtained when change from first to fifth Binet administration was analyzed. The results of the significant analysis of covariance and the variables associated with this analysis are summarized in Tables 4 and 5.

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[1] At the University of Kentucky Computing Center.

TABLE 4: HYPOTHESIS 1a: SUMMARY OF THE SIGNIFICANT ANALYSIS OF COVARIANCE INCORPORATING INITIAL I.Q. LEVEL AND GRADE PLACEMENT STATUS. FORMER PROJECT CHILDREN. FIFTH BINET RAW I.Q. SCORES

Source[1]	df	F	p
Initial I.Q. Level (IQ)	1,29	1.57	ns
Grade Placement Status (GPS)	1,29	4.39	.05
IQ x GPS	1,29	2.02	ns

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[1] Adjusted for the effects of chronological age at testing and total child development center attendance.

TABLE 5: HYPOTHESIS 1a: SUMMARY OF VARIABLES ASSOCIATED WITH THE SIGNIFICANT ANALYSIS OF COVARIANCE INCORPORATING INITIAL I.Q. LEVEL AND GRADE PLACEMENT STATUS. FORMER PROJECT CHILDREN. FIFTH BINET RAW I.Q. SCORES

	Promoted, Above 80 Initial I.Q.		Promoted, Below 80 Initial I.Q.		Retained, Above 80 Initial I.Q.		Retained, Below 80 Initial I.Q.	
N	20		3		6		6	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Dependent Variable: IQ_5	93.60	12.10	76.67	4.04	81.67	9.48	74.33	6.53
Covariates:								
	Mean		Mean		Mean		Mean	
CA_5(in mos.)	116.65		121.33		114.17		121.50	
Total CDC Attendance (in days)	131.35		134.00		116.00		123.50	

Finally, no sex differences were found for I.Q. raw scores on any administration or for I.Q. difference scores (using fifth administration as the criterion) for the total sample of 35 children who received all five administrations of the Binet.

Hypothesis 1b

Rather than compare former Project participants on the basis of "verbal" and "performance" items passed on successive administrations of the Binet, it was decided to use the system for categorizing Binet items developed by Valett (1965). This system allows for differentiation of Binet items into six basic classifications: General Comprehension (GC), Visual-Motor Ability (VM), Arithmetic Reasoning (AR), Memory and Concentration (MC), Vocabulary and Verbal Fluency (VVF), and Judgement and Reasoning (JR) (see Appendix A). Thus, comparisons made between groups of former Project children could take into account performance differences within these six categories.

The basic design for the evaluation of Hypothesis 1b was to compare promoted and retained former Project children (all of whom had scored above 80 on their first Binet) on the number of Binet items passed above basal level[1] within each of the six Valett classifications for the initial, third and fifth Binet administration.[2]

The dependent variable for these analyses was the total number of items passed above basal within a given Valett category. Within each category, subjects were ranked according to the total number of items passed above basal. Fisher's Exact Test of Probability (Siegel, 1956)[3] was then performed to determine if the numbers of promoted and retained children above and below the grand median differed from what would be expected to occur by chance.

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[1] Defined as the age level of the Binet below which the child is assumed to be able to pass all test items. Basal level of performance is routinely established at the outset as part of standardized procedures set forth in the Binet manual.

[2] Although Hypotheses 1b and 1c specify that groups are to be compared on the basis of "each annual administration," it was decided, due to time pressures and the results of Hypothesis 1a to restrict these comparisons to the initial, third and final administrations.

[3] Because expected cell frequencies were not all > 5, this procedure was used rather than the Median Test.

Table 6 presents the medians and ranges for each of the six Valett categories for the promoted and retained groups on first, third and fifth Binet administrations. Statistical comparisons were significant in only two instances. That is, on first Binet administration (given in the Project centers) the children who later were retained in school (n=6) during first or second grade passed more items above the basal level in the Judgement and Reasoning Category than children (N=20) who were later promoted on schedule from first to fourth grade ($\rho<.03$). The reverse of this finding obtained for the same category on the third administration of the Binet at the end of second grade ($\rho<.02$).

These findings support to a limited extent the predictions made in Hypothesis 1b. The expectation that promoted children would excell retained children qualitatively as well as in terms of the magnitude of overall I.Q. scores is supported by the finding that promoted children passed more items above basal within the Judgement and Reasoning Category than did retained children on their third Binet. This finding is even more interesting when it is remembered that retained children passed more items above basal in this same category on their first Binet. This suggests that there may be some relationship between school failure and I.Q. loss within this sample of children which was not apparent on their first intellectual evaluation. The fact that these two groups did not differ within any of the Valett categories on the fifth Binet administration is probably related to the earlier finding that retained children tended to show the greatest loss in I.Q. points during the first two years of school, but subsequently have shown little or no loss.

Despite these findings, there is little overall difference in qualitative performance between promoted and retained former Project children when the Valett categories are employed as the basis of comparison. To some extent the failure to find more significant differences may be a function of the overlap between Valett's categories (see Appendix A), the large discrepancies in sample size between the promoted and retained groups, and the necessity of applying non-parametric statistical techniques to these data.

Hypothesis 1c

The design for this hypothesis is essentially the same as that employed to evaluate Hypothesis 1b except for the independent variable. Former Project children in the total follow-up sample who had shown an overall gain in I.Q. scores (N=16)[1] or an overall loss in I.Q. performance (N=19) between first and fifth administrations of the Binet were compared in terms of the number of items passed above basal within each of the six Valett categories (see Appendix A) for first, third and fifth Binet tests.

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[1] Overall "gain" was defined as no change or a gain when $IQ_5 - IQ_1$ was the dependent variable, whereas negative difference was defined as I.Q. "loss".

TABLE 6: HYPOTHESIS 1b: A COMPARISON BETWEEN PROMOTED (N=20) AND RETAINED (N=6) FORMER PROJECT PARTICIPANTS (INITIAL I.Q. ABOVE 80) USING VALETT'S CATEGORIES. MEDIANS AND RANGES FOR TOTAL ITEMS PASSED ABOVE BASAL. FIRST, THIRD AND FIFTH ADMINISTRATIONS

VALETT'S CATEGORIES	Binet 1				Binet 3				Binet 5			
	Promoted		Retained		Promoted		Retained		Promoted		Retained	
	Median	Range	Median	Range	Median	Range	Median	Range	Median	Range	Median	Range
General Comprehension	1	(0-5)	3.5	(1-5)	2	(0-5)	1	(0-3)	2	(0-5)	1.5	(0-4)
Visual-Motor Ability	2	(0-8)	3	(1-4)	1.5	(0-5)	1.5	(1-2)	2	(0-4)	1.5	(1-3)
Arithmetic Reasoning	0	(0-1)	0	(0)	1	(0-2)	1	(0-1)	1	(0-2)	.5	(0-1)
Memory and Concentration	0	(0-2)	1.5	(0-2)	3	(0-8)	1	(0-2)	3	(1-8)	1.5	(1-4)
Vocabulary and Verbal Fluency	1	(0-2)	1	(1-3)	.5	(0-2)	1	(0-2)	2	(0-4)	.5	(0-2)
Judgement and Reasoning	4	(0-11)	6*	(4-7)	5**	(2-10)	3	(3-4)	5	(2-12)	5.5	(2-8)

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* $\rho < .03$

** $\rho < .02$

Table 7 presents a summary of the medians and ranges of items passed above basal for each category and each Binet administration for the two Project children groups. Statistical comparisons (Fisher's Exact Test of Probability or Chi Square, where expected cell frequencies equalled or exceeded five) resulted in three significant differences between Gainers or Losers. Those children who lost I.Q. points on subsequent Binet tests passed more items above basal on their first Binet in the General Comprehension and Judgement and Reasoning categories ($\rho<.01$, .03 respectively) than did those children who subsequently maintained or increased their I.Q. scores on later tests. On the third Binet administration, however, Losers were significantly lower on items passed above basal in the Memory and Concentration category ($\rho<.03$). Somewhat surprisingly, Losers were again higher than Gainers in items passed above basal on the fifth Binet for the Judgement and Reasoning category ($\rho<.03$).

In partial support of the prediction that Gainers would perform qualitatively better than Losers, these data do show such a difference at the end of second grade, but only for the Memory and Concentration category. On initial testing the Loser group was clearly superior to the Gainer group in two categories (which overlap in item content) and and on final testing (fifth administration) it was again superior in one of those categories (Judgement and Reasoning), which is perhaps the more inclusive of the two (see Appendix A).

It should be noted that of the total follow-up sample (N=35), the Gainer group (N=16) included six children who had been retained and the Loser group (N=19) had seven retained children. In addition, ten children in the Gainer group earned initial Binet I.Q. scores at or above 80, whereas 16 children in the Loser group scored at or above 80 on their first Binet. This suggests that qualitative comparisons between promoted and retained children who scored at the same initial I.Q. level (i.e., at or above 80 - see Hypothesis 1b) may be more valid for this sample than comparisons based solely upon overall I.Q. change between first and fifth Binet administrations. This supposition has been born out in previous analyses which assessed the main effects and interactions associated with grade placement status and initial I.Q. level. It has been a consistent finding that more significant differences in intellectual functioning are associated with the main effect of grade placement status than any other independent variable or variable interaction. Initial intellectual level (at or above 80 versus below 80) has consistently been a non-significant factor except for analyses based upon the first two Binet administrations.

Other qualitative comparisons are essentially precluded for this sample due to the small numbers of subjects available. For example, it would be of interest to determine if any sex differences are associated with passing items above basal within the Valett categories, especially if those differences were a function of grade placement status, initial I.Q. level or overall I.Q. gain or loss. (Overall analysis of sex differences yielded no significant results, as has been previously reported.)

TABLE 7: HYPOTHESIS 1c: A COMPARISON BETWEEN GAINERS (N=16) AND LOSERS (N=19) FROM FIRST TO FIFTH BINET ADMINISTRATION USING VALETT'S CATEGORIES. FORMER PROJECT PARTICIPANTS. MEDIANS AND RANGES FOR TOTAL ITEMS PASSED ABOVE BASAL. FIRST, THIRD AND FIFTH ADMINISTRATIONS

	Binet 1				Binet 3				Binet 5			
	Gainers		Losers		Gainers		Losers		Gainers		Losers	
VALETT'S CATEGORIES	Median	Range	Median	Range	Median	Range	Median	Range	Median	Range	Median	Range
General Comprehension	0	(0-4)	2*	(0-5)	2	(0-3)	1	(0-5)	1	(0-4)	2	(0-5)
Visual-Motor Ability	2	(0-4)	2	(0-4)	2	(0-4)	1	(0-4)	1	(0-4)	2	(0-4)
Arithmetic Reasoning	0	(0-1)	0	(0-1)	1	(0-1)	1	(0-2)	1	(0-1)	1	(0-2)
Memory and Concentration	0	(0-2)	1	(0-2)	3**	(0-4)	1	(0-4)	3.5	(1-4)	3	(1-4)
Vocabulary and Verbal Fluency	1	(0-2)	1	(0-3)	.5	(0-2)	0	(0-2)	2	(1-4)	1	(0-3)
Judgment and Reasoning	2	(0-6)	5**	(0-11)	5	(2-9)	3	(1-10)	3.5	(2-12)	6**	(2-11)

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* .01

** .03

Hypothesis 2a

It was of interest here to determine if gain or loss in I.Q. scores would be related to the amount of participation in the Project child development program these children (N=35) had experienced. It was predicted that I.Q. change in the first year of public school would be related to the number of days a child had attended a child development center, whereas it was expected that any such effect would no longer be significant by the time these children had completed four years of public school.

It was determined that during the first grade, 22 former Project children still in the follow-up sample showed a gain in I.Q. scores ($IQ_2 - IQ_1$) whereas 13 of these children lost I.Q. points from the time of their initial testing. Table 8 presents a summary of the I.Q. gain or loss experienced by these two groups ($t = 6.30$, $df = 33$, $\rho < .001$, two-tailed test) and their total attendance at a child development center. Despite the fact that total child development center attendance correlates +.32 ($\rho > .05 < .10$) with I.Q. scores obtained in the first grade[1] and +.72 ($\rho < .01$) with I.Q. change between first and second administration ($IQ_2 - IQ_1$) (N=35), a t-test comparison between I.Q. gain and loss groups in terms of their average attendance was not significant ($t = .02$, $df = 33$, ρ = ns).

TABLE 8: HYPOTHESIS 2a: I.Q. CHANGE AND CHILD DEVELOPMENT CENTER ATTENDANCE ASSOCIATED WITH FORMER PROJECT PARTICIPANTS WHO GAINED OR LOST I.Q. POINTS DURING FIRST GRADE

	GAIN ($IQ_2 - IQ_1$)	LOSS ($IQ_2 - IQ_1$)
N	22	13
Mean I.Q. Change*	+7.86	-11.77
SD	7.88	8.47
Range	0 - 25	(-2) - (-28)
Mean CDC Attendance (in days)	125.95	126.23
SD	35.29	25.14
Range	65 - 198	71 - 169

*$\rho < .001$.

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[1] Total attendance was not correlated with initial I.Q. since many children were tested before they had completed their participation.

When child development center attendance was compared for children who gained (N=16) or lost (N=19) I.Q. points from first to fifth administration (i.e., during the first four years of public school) again no significant difference was obtained ($t = .39$, $df = 33$, $\rho = ns$) even though the two groups differed in terms of I.Q. change ($t = 7.76$, $df = 33$, $\rho < .001$, two-tailed test). There were no significant correlations between child development center attendance and IQ_5 or IQ change between first and fifth administrations. Table 9 summarizes the data used for these comparisons.

TABLE 9: HYPOTHESIS 2a: I.Q. CHANGE AND CHILD DEVELOPMENT CENTER ATTENDANCE ASSOCIATED WITH FORMER RURAL CHILD CARE PROJECT PARTICIPANTS WHO GAINED OR LOST I.Q. POINTS OVER THE FIRST FOUR YEARS OF PUBLIC SCHOOL

	GAIN ($IQ_5 - IQ_1$)	LOSS ($IQ_5 - IQ_1$)
N	16	19
Mean I.Q.* Change	+6.00	-10.32
SD	5.06	6.33
Range	0 - 13	(-1) - (-25)
Mean CDC Attendance (in days)	128.44	124.05
SD	40.09	22.94
Range	65 - 198	71 - 169

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* $\rho < .001$

Thus, it appears that the predictions in Hypothesis 2a are partially confirmed. Although gainers and losers do not differ in the amount of Project attendance, there is a significant positive relationship between total attendance and I.Q. change during the first grade following Project participation for the follow-up sample (N=35) as a whole. There is no significant relationship between attendance in a Project center and I.Q. change over the first four years of school, however.

Hypothesis 2b

This hypothesis entails the same design as Hypothesis 2a. That is, it was predicted that the families of former Project children who gained in I.Q. scores from first to second administrations of the Binet (i.e., during first grade) would have received significantly more social services than comparable families with children who showed I.Q. loss during the first year after they left the Project.

To assess this prediction, those children who served as comparison groups for the first part of Hypothesis 2a (I.Q. gain and loss in first grade) were compared on the basis of the total number of visits to their families made by Project Social Workers and Homemakers from the time the child entered the Project until he or she entered first grade.[1] Table 10 presents the mean number of social service visits paid to these two groups. A t-test comparison of these means indicated that the apparent between-groups difference is not significant, probably due to the high degree of variability within both groups ($t = .69$, $df = 33$, $\rho = ns$). The correlation between total number of social service visits and IQ_2 is -.25 and between social services visits and $IQ_2 - IQ_1$ is +.10 (N=35).

TABLE 10: HYPOTHESIS 2b: FORMER PROJECT PARTICIPANTS WHO GAINED OR LOST I.Q. POINTS DURING FIRST GRADE. SOCIAL SERVICES VISITS

	GAIN[1] ($IQ_2 - IQ_1$)	LOSS[1] ($IQ_2 - IQ_1$)
N	22	13
Mean Social Services Visits	23.95	16.62
SD	33.31	22.00
Range	5 - 127	1 - 79

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[1] Data on gain and loss are summarized in Table 8.

As a further assessment of the prediction, children in the $IQ_2 - IQ_1$ gain or loss groups were compared in terms of their family social service designation, i.e., whether the family was designated, on the basis of observed adequacy and need, to receive social work "contact" services (normally the case with more adequate families), homemaking services

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[1] In 25 out of the 35 families involved in this comparison Project services were continued after the child in the sample entered first grade, usually because other younger children in the family were continuing to attend a child development center. No assessment of the impact of continued versus terminated services has been made in the present evaluation.

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(where the mother's homemaking skills need improvement), or social work/homemaker "multiproblem" services (reserved for families undergoing severe crisis or disorganization). These comparisons were accomplished by the use of the Chi Square Test and Fisher's Test of Exact Probability (Siegel, 1956). In no comparisons did the distribution of family social service designations of children who gained or lost in I.Q. scores during first grade differ significantly from chance. Table 11 summarizes the social services designations of these families.

TABLE 11: HYPOTHESIS 2b: FORMER PROJECT PARTICIPANTS WHO GAINED OR LOST I.Q. POINTS DURING FIRST GRADE. FAMILY SOCIAL SERVICE DESIGNATIONS

	Social Work "Contact"	Homemaking	Social Work/Homemaking "Multiproblem"
GAIN ($IQ_2 - IQ_1$) N=22	9	9	4
LOSS ($IQ_2 - IQ_1$) N=13	5	6	2

On the basis of these findings, Hypothesis 2b is not supported.

Hypothesis 2c

It was predicted that the same effects expected in Hypothesis 2b would be obtained for children who had shown gain and loss in I.Q. scores over the first four years of public school ($IQ_5 - IQ_1$). Accordingly, a t-test comparison was run between children who gained (N=16) or lost (N=19) from first to fifth Binet administration in terms of the number of social services visits paid to their families. Table 12 presents a summary of the social service visits received by these groups. Despite an apparent mean difference, the statistical analysis indicates the groups do not differ significantly ($t = 1.50$, $df = 33$, ρ = ns). Again, the failure to attain a significant result may be attributable to the high degree of heterogeneity within groups. Pearson product-moment correlation coefficients computed between social services visits, IQ_5 and $IQ_5 - IQ_1$ were -.20 and +.24 respectively.

TABLE 12: HYPOTHESIS 2c: FORMER PROJECT PARTICIPANTS WHO GAINED OR LOST I.Q. POINTS OVER THE FIRST FOUR YEARS OF PUBLIC SCHOOL. SOCIAL SERVICES VISITS

	GAIN[1] ($IQ_5 - IQ_1$)	LOSS[1] ($IQ_5 - IQ_1$)
N	16	19
Mean Social Service Visits	29.44	14.32
SD	36.71	20.21
Range	6 - 127	1 - 87

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[1] Data on gain and loss are summarized in Table 9.

Finally, children who had gained or lost I.Q. points over the first four years of school were compared on the basis of their family social services designations (i.e., social work contact, homemaking or social work/homemaking "multiproblem") by means of the Chi Square Test or Fisher's Test of Exact Probability. These comparisons did not reveal any significant differences in terms of the obtained distribution of social services designations for the two groups. The data for these comparisons are summarized in Table 13.

TABLE 13: HYPOTHESIS 2c: FORMER PROJECT PARTICIPANTS WHO GAINED OR LOST I.Q. POINTS OVER THE FIRST FOUR YEARS OF PUBLIC SCHOOL. SOCIAL SERVICES DESIGNATIONS

	Social Work "Contact"	Homemaking	Social Work/Homemaking "Multiproblem"
GAIN ($IQ_5 - IQ_1$) N=16	5	9	2
LOSS ($IQ_5 - IQ_1$) N=19	9	6	4

It may be concluded that Hypothesis 2c also was disconfirmed despite apparent differences in the predicted direction and small positive correlations between the number of social services visits and I.Q. change between first and fifth Binet administrations.

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DISCUSSION

Follow-up assessment of the intellectual functioning of former Project children (who attended Project centers during 1965-1966) terminated with the fifth annual administration of the Stanford-Binet to those children (N=35) remaining in the sample as of spring, 1970. At this point in time, it would be useful to summarize the previous findings of this three year follow-up study (see Briscoe and Archambo, 1969, and Archambo and Briscoe, 1970, for specific results of the 1967-1968 and 1968-1969 evaluations).

First, it is clear that over time there has been a general tendency for the sample as a whole to show a slight but significant decrease in I.Q. scores, especially within the first two years of school. Of greater significance has been the tendency for children who scored at or above 80 on their first Binet and who were subsequently promoted on schedule throughout the first four years of public school to score continually higher on the Binet, whereas, children who scored at or above 80 on their first Binet but who were retained in first or second grade have shown a decrease in obtained Binet I.Q. scores with their most significant loss occuring during first grade. Over time, especially during the first two years of school, these retained children have shown a greater decrease in intellectual functioning than promoted children, despite the fact that only children who scored above 80 initially were included in the comparisons.

Children who were retained after leaving the Project were held back for numerous reasons, including social, emotional or intellectual immaturity as judged by their first or second grade teachers. These factors were also noted to some extent on Project family case records, but there was a greater tendency for Project workers to note health and emotional problems rather than intellectual "slowness" (Archambo and Briscoe, 1970). Current findings have also indicated that there is a positive relationship between I.Q. change during first grade and previous attendance in a Project child development center. Exposure to the Project (as measured by attendance) is not related to overall I.Q. change from first to fifth Binet administration for this sample, however. Nor is there any apparent relationship between exposure of a child's family to Project social services and intellectual functioning.

Attempts to analyze for qualitative differences in intellectual ability between former Project children who scored above 80 on their first Binet and who subsequently differed in their school success have reinforced the notion that differences in intellectual change between these groups did not become manifest until after they had experienced first grade. According to their performance within each of the Valett (1965) categories, retained children were initially as bright or brighter than those children who subsequently experienced normal promotion in school. Although promoted children tended to excell retained children in one category after two years of school, this difference no longer obtained by the time they had completed four years of school. Comparisons between children who gained or lost I.Q. points from first to fifth Binet testing, although not as clear cut because of the presence of retained and promoted children in both groups who varied on initial I.Q. level as well, also indicated that the significance of overall I.Q. gain or loss was greatest after two years of school. Initially such children did not differ or else the group which subsequently lost I.Q. points was superior.

It has become increasingly apparent over the past three years that the children comprising this follow-up sample, despite the influences of attrition, remain a very heterogeneous group with respect to intellectual functioning. Although it is possible to attribute some of the differences between promoted and retained children (who scored above 80 initially) in overall I.Q. change to statistical regression, it may be that these data illustrate another important aspect of Head Start programs, namely that children enrolled in such programs are affected by them largely as a function of characteristics which they bring with them into the program. These data suggest that certain children, because of health, emotional or other problems, will not fare well in school following Head Start even though they are of at least normal intelligence. It does not seem warranted, therefore, to assume that the brighter children in Head Start centers (i.e., those who score comparatively high on initial intellectual ability tests) necessarily need less attention than those children who do not appear to be functioning as adequately in testing situations.

It is not clear from these data whether retained children who showed a large decrease in I.Q. scores during first and second grades tended to show increments in intellectual functioning while attending Project centers. There is some indication (Archambo and Briscoe, 1970) that children who scored above 80 on their first Binet and who were subsequently retained in first or second grade did not show the same negative pattern of intellectual change as other, initially "brighter" retained children. Retained children who scored below 80 on their first Binet have tended over time to show a slight but consistent increment in I.Q. scores. To what extent this observation is the result of statistical regression is again uncertain. However it also suggests that the effects of early intervention and subsequent stimulation available in public school may be qualitatively different depending upon the child's intellectual level and negative conditions existing in his home environment.

A basic recommendation which has been made to the Rural Child Care Project staff on the basis of this follow-up study is that greater effort be made to identify "high risk" children defined as being of at least normal intelligence with negative personal or family influences in the areas of physical and mental health. In line with other recommendations made in this report regarding improvement of the second year of a child's experience in the Project (see Sections IV and V, Hypotheses 10 and 11), it is recommended that such high risk children receive special attention and training in the areas of school readiness and social skills. In accordance with the rationale underlying Hypotheses 4 - 9 (see Section III), it is also recommended that extra effort be made to involve the parents and families of such children in volunteer aspects of the Project which provide skill training and exposure to the goals and procedures of the child development program. It is concluded from these findings that such efforts made with the families will be more effective in changing those negative aspects which contribute to a child's later school failure that concentrating solely upon providing social work and homemaking services to parents.

II. Hypothesis 3a-c: Utilization of Community and School Resources as a Function of Length of Project Participation and Project Social Services Designation .

Hypothesis 3a states that,

> "Parents of children who have attended a child development center for a minimal period of 100 days and whose families have received a minimum of one year of Project social work, homemaking or combined social work and homemaking services will be significantly more aware of community resources, more assertive in contacting community agencies, higher in their educational aspirations for themselves and their children and evidence more concrete recent achievements in these areas, express more favorable attitudes toward involvement in community, school and Project-related programs and evidence more concrete recent achievement in these areas than a comparable group of newly-enrolled Project parents whose children have attended a child development center for a maximum period of 60 days and who have experienced a maximum of four months of Project social services."

Hypothesis 3b states that,

> "Among those parents of children who have attended a child development center for a minimal period of 100 days and whose families have received a minimum of one year of Project social work, homemaking or combined social work and homemaking services, those parents who have received social work 'contact' services will be significantly higher on the above measures than a group of comparable parents who have received homemaking or combined social work and homemaking services during the same period."

Hypothesis 3c states that,

> "Among those parents of children who have attended a child development center for a minimal period of 100 days and whose families have received a minimum of one year of Project homemaking or combined social work and homemaking services, those parents who have received combined social work and homemaking services will be significantly higher on the above measures than those parents who have received homemaking services only."

METHOD

Preliminary work on this study was done in August, 1969, when the Research Associate visited all ten Project counties to determine from Project Social Workers and Homemakers what welfare, Project, community action, public school and retail resources are available to Project participants in each county. With this information available as a "check" on the validity of answers given by Project parents to an interview on community and school resources, the Research Division staff proceeded to develop the Community and School Involvement Interview (see Appendix B) during the late fall of 1969. Administration of this interview was accomplished in mid-February. Comparisons were based upon length of Project participation ("Old" versus "New" Admissions Groups) and whether the family was designated to receive Social Work "contact", "homemaking" or "multiproblem" services.

Subjects

During December, 1969, and January, 1970, Project records were consulted to determine which Project parents would be eligible for inclusion in the sample to be given the Community and School Involvement Interview (CSII). A total of 82 parents comprising the "Old Admissions Group" were eligible for the sample. That is, these parents had entered the Project originally between June and August of 1968, were still active in the Project, and their children in each case had a total combined attendance record at a child development center (CDC) of 100 days or more as of December 1, 1969. A total of 152 Project parents were eligible for the "New Admissions Group" sample. This group was comprised of parents who had entered the Project between May and September, 1969 (entrance requirements had to be relaxed due to the summer closing of the Project centers), were currently enrolled in the Project, and whose children had a combined total CDC attendance of not more than 60 days as of December 1, 1969.[1]

In order to cut down on the numbers of parents who might refuse to be interviewed or fail to appear when scheduled, each County Social Worker was asked to indicate which families would refuse or be unable to participate in the interviewing. This procedure resulted in the elimination of 89 parents. The social service status of the remaining parents was determined by consulting Project records.

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[1] It was decided not to include new parents, male or female, in the sample for the Community and School Involvement Interview if the mother in question was a participant in the Mother Training Project (see Section III, Hypotheses 4-9). Inclusion in this survey might have disrupted the working relationship between a mother and Teacher or represented "overuse" of some mothers. Eligible new and old parents from the Ages Center in Harlan county were included despite closing of the center as a result of contaminated water.

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The criteria devised for classifying parents into the three social service categories were as follows:

Social Worker "Contact" - Adequate

> No Homemaker was officially assigned because the family was thought to be not in need of these services.

Social Worker "Contact" - Inadequate or Uncooperative

> A Homemaker was recommended but the family refused to accept the service. (These parents were not included in the study.)[1]

Homemaker

> A Homemaker was assigned to visit this family regularly (weekly) as a part of her case load.

Social Worker-Homemaker "Multiproblem"

> The Social Worker and Homemaker both spend as much time as possible regularly or on "crisis intervention" basis. This service category differs from social worker and homemaker services in terms of the extent of family inadequacy, the severity of problems requiring intensive services, and/or the amount of time the Social Worker and Homemaker spend with the family.

In the Old Admissions Group, 35 parents were receiving social worker contact services at the time of interviewing, 18 parents were assigned to a Project Homemaker, and 5 parents were designated as multiproblem. In the New Admissions Group, 49 parents were designated as social worker contacts, 21 parents were being visited by Homemakers regularly, and 17 parents were considered multiproblem.

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[1] In two cases, parents who were listed as social worker contact families were eliminated from the sample after interviewing when it was determined from case history records that they had refused homemaker services. In one other case the social service designation had not been determined by the time of interview. Subsequently, this parent was classified as a social worker contact.

Of the total 145 parents scheduled for interviewing, 36 were males and 109 were females. Tables 14 and 15 present a summary by county and social service category of the male and female parents scheduled for interviewing and the actual number (N=81) of parents interviewed in the Old and New Admissions group.[1]

An examination of the reasons given for failure to be interviewed indicate that of those 64 scheduled parents not seen, 47% were ill or having personal problems, 4% could not get to the interviewing site due to impassible roads, 9% were working, 10% refused to participate and 10% had moved, dropped from the Project or were unaccounted for. Approximately 20% of the 64 parents had not been contacted despite efforts to do so.

One additional trip was made to Owsley county to interview three multiproblem parents in the Old Admissions group so that the number of subjects in that category could be increased. Otherwise, no additional efforts were made to increase the sample because of persisting bad weather and flu conditions.

Thus the total sample interviewed was composed of 68 females and 13 males, 35 Old Admissions and 46 New Admissions parents, and 40 social work contact, 26 homemaking and 15 multiproblem parents. Ten parents interviewed were from the same family (man and wife).

Procedure

Administration of the CSII was done by four members of the Research staff working in teams of two (the Research Associate administered four interviews). In all cases interviews were administered orally to individual parents at the county Social Worker's office, a room in a child development center, a nearby church building secured for this purpose or in a few cases, the homes of participants. Parents were brought to the interviewing site by Homemakers and Social Workers or else arranged to come in on their own.

Members of the Research staff teams had been trained prior to going in the field to administer the interview according to standard procedures. Attention was given in training to the objectives for each item so that the interviewer could probe respondents appropriately. The interview required fifteen minutes to complete in most cases.

The administration of the CSII was beset with several problems. First, the instrument itself had to be revised several times. Second, severe weather and funding uncertainties necessitated several delays in scheduling since field testing is hazardous and expensive in eastern Kentucky during the winter. Finally, the fact that the staff was able

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[1] The total number of parents interviewed is 81, not 78, since three eligible parents (one grandmother) not originally scheduled were interviewed. See Tables 14 and 15.

TABLE 14: HYPOTHESIS 3: RURAL CHILD CARE PROJECT PARENTS ADMINISTERED THE COMMUNITY AND SCHOOL INVOLVEMENT INTERVIEW: OLD ADMISSIONS GROUP.[1]

SOCIAL SERVICE DESIGNATION

COUNTY	Social Worker		Homemaker		Multiproblem	
	Male	Female	Male	Female	Male	Female
Elliott		(2) 2[2]	(1)	(2)		
Floyd			(1) 1	(1) 1		
Harlan	(1) 1	(2) 2		(1) 1		
Knott	(1)	(4) 3		(1) 1		
Lee		(3) 1		(2) 1	(1) 1	(1) 1
Letcher	(3)	(3) 2				
Magoffin			(2) 1[3]	(4) 3		
Morgan		(2) 1	(1) 1	(1) 1		
Owsley	(5) 2	(6) 3			(1) 1	(2) 2
Wolfe		(3) 1		(1) 1		
TOTALS:	(10) 3	(25)15	(5) 3	(13) 9	(2) 2	(3) 3

Total Scheduled: 58
Total Interviewed: 35

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[1] Parents scheduled are indicated by parentheses.

[2] A grandparent receiving Project services, with whom a Project child was living, was interviewed in lieu of the absent parent.

[3] An eligible spouse reportedly unavailable for interviewing and hence not scheduled, was interviewed.

TABLE 15: HYPOTHESIS 3: RURAL CHILD CARE PROJECT PARENTS ADMINISTERED THE COMMUNITY AND SCHOOL INVOLVEMENT INTERVIEW: NEW ADMISSIONS GROUP.[1]

SOCIAL SERVICE DESIGNATION

	Social Worker		Homemaker		Multiproblem	
COUNTY	Male	Female	Male	Female	Male	Female
Elliott		(2) 1	1[2]	(1)	(1)	(1)
Floyd		(4) 1	(2) 1	(5) 5		
Harlan	(4)	(14) 6	(1)	(3) 2		(2) 2
Knott		(2) 1		(1)	(1)	(1)
Lee	1[2]	(5) 3	(1)	(1) 1		
Letcher	(3)	(7) 4		(1) 1		(1) 1
Magoffin			(1) 1	(3) 1		
Morgan		(2) 2				(1) 1
Owsley	(1)	(3) 2			(4) 2	(5) 4
Wolfe						
TOTALS:	(8) 1	(41)21	(5) 2	(16)12	(6) 2	(11) 8

Total Scheduled: 87
Total Interviewed: 46

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[1] Parents scheduled are indicated by parentheses.

[2] An eligible spouse reportedly unavailable for interviewing and hence not scheduled, was interviewed.

to interview only 57% of the scheduled parents was disappointing, especially when attempts had been made to remove poor risk parents from the subject list ahead of time. Field testing of Project parents has been hampered by a lack of understanding on the part of parents and Project staff of the importance of evaluation. The Research and Project staffs have discussed ways in which new families can be informed more effectively about their obligation to participate in research evaluations. However, it is clear that assessment of parent "opinions" or "information" is very threatening to these respondents and often yields data which is questionable in validity. This is especially true where contact with the parents is brief, impersonal, apparently "unrelated" to the Project and not enthusiastically supported by Project personnel.

Instrument

The Community and School Involvement Interview, which was devised empirically by members of the Research staff is presented in Appendix B. This interview was reviewed in January, 1970, by the Appalachian Regional Commission and the OEO Office of Research.

Every effort was made in devising the interview to produce items which are very concrete in nature, simple and straightforward in presentation, and related as specifically as possible to the predictions found in Hypothesis 3. The first section of items asks the parent how impoverished families may obtain food, medical, clothing and home repair services in their communities. Use of these services by parents is also ascertained. Several items deal with parent educational aspirations for themselves and their children. The extent to which parents are aware of and have availed themselves of educational and vocational programs (especially since entering the Project) is asked. Items dealing with awareness of the purposes, frequency of attendance, reasons for attendance (or non-attendance) of PTA, Community Action and Rural Child Care Project adult groups take up a large section of the interview. The concluding items ask parents about their consumer practices in several areas, i.e., which stores have the "best" prices, how they determined this, and the extent to which they shop in these establishments.

RESULTS

The findings obtained on the Community and School Involvement Interview (CSII) are summarized under two general headings. First, a descriptive summary of parent responses to items on the interview is presented. Then these data are discussed in terms of the specific predictions stated in Hypotheses 3a-c.

Descriptive Summary of Findings

Responses given to each item of the CSII by the total sample of Project parents (N=81) are presented in Appendix C. Inspection of these data according to groups of items with common content provides a general picture of the degree to which these parents were aware of and used various community, public school and Rural Child Care Project resources to meet certain physical, health, educational and economic needs.

In terms of their awareness of various resources available to impoverished families in their communities, the majority of Project parents interviewed reported correctly where food (64.13%)[1] medical services (70.37%), clothing (71.60%), home repairs (48.14%) and continuing education or vocational training (56.79%) could be obtained. Most parents were aware of local school PTA (66.66%), Community Action (46.91%) and Rural Child Care Project and parent groups (92.59%). As far as consumer information was concerned, most parents indicated they knew where to obtain groceries (87.65%), good clothing (81.48%), and hardware (74.07%) at the "best" prices (determined mainly on the basis of comparative shopping).

When actual use of these resources is examined, fewer parents[2] reported occasional or frequent use of food programs (17.28%), medical services (32.09%), clothing donations (8.63%) and house repair resources (12.34%). Relatively more parents reported patronizing retail establishments which they believed offered the "best" prices for food (80.23%), clothing (74.06%), and hardward (70.35%).[3]

Most parents did not learn about these community and school resources as a result of enrolling in the Rural Child Care Project nor did Project personnel provide most of them with this information. For example, from 2.46% - 7.40% of the sample reported learning about food, medical care and house repair services from Project personnel. Depending upon the specific service (food, medical, housing) only 16.04% - 22.22% of the sample reported learning about these programs after enrolling in the Project, regardless of the source of their information. Relatively more parents indicated they learned about clothing resources from Project personnel (28.39%) after entering the Project (33.33%, independent of the source of information).

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[1] Percentages within parentheses refer to the per cent of the total sample (N=81) who responded in the indicated manner.

[2] Data are missing on these items for 25% or more of the total sample.

[3] No validation of consumer data was attempted. The main interest here was to determine the criterion parents used to decide which retail stores were "best".

In examining reported educational aspirations for self and for child,[1] it was found that only 13.60% of the total sample had completed high school or some college (there were no college graduates in the sample; only two parents had completed as much as 30 college hours). Although 86.40% had completed less than 12 years of schooling (59.25% had completed 8 years or less), the vast majority of parents (87.63%) aspired to complete high school and/or college.

While it appeared that 70 of these parents were eligible for the GED, only two reported completing it (since entering the Project). Despite the fact that the majority of parents knew where to obtain educational services, at most only 20.98% of the sample reported using such resources for themselves or other members of their families.[2] There was no relationship between use of educational resources and enrollment in the Project. Typically, most parents reported learning about adult education programs prior to Project enrollment (34.56%), primarily from neighbors and relatives (27.16%) or staff of other agencies (12.34%).

Virtually all parents (96.28%) wanted their children to finish high school. Most parents also aspired to have their children obtain an undergraduate or graduate college degree (90.11%).

Participation in parent groups associated with the Project, public schools and the community varied widely within this sample. Twenty per cent of the parent sample reported having attended a PTA meeting, with only 7.40% attending regularly. Few parents (17.26%) said they attended CAP meetings. Occasional or regular attendance at Project parent meetings was comparatively higher (49.37%).

Differences in parent group participation may in part be a reflection of the manner in which parents found out about meetings. Most parents reported that if they knew about PTA it was through notices their children brought from school (27.16%), whereas they learned of CAP meetings through neighbors, relatives or CAP personnel (25.92%). Information about Project meetings was conveyed to most parents (85.18%) by Project staff. Listed as common reasons for not attending parent group meetings, regardless of the sponsoring agency, were conflicts in work schedules and transportation problems. Most parents who did attend any type of meeting drove themselves there or, to a lesser extent, relied upon Project or other agency personnel for transportation. It was interesting to note that parents attending CAP meetings tended to drive themselves more, whereas those attending Project meetings relied more upon Project personnel for transportation.

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[1] The child currently enrolled in the Rural Child Care Project.

[2] This finding is based upon answers to more than one item, since there is an apparent inconsistency in responses given to these items.

Reasons given for attending both PTA and Project parent group meetings centered upon interest in the child and the program, whereas attendance at CAP meetings was apparently prompted by more generalized interests or "curiosity".

Although 72.82% of these parents were able to name a specific educational or social service aspect as the purpose of the Rural Child Care Project for children, 50.59% of the sample were vague as to the purpose of the Project for parents, or else they indicated trivial purposes, such as "babysitting." Only 27.14% mentioned that the Project provides specific educational, social, mental health and medical benefits for parents.

Hypothesis 3a

It was predicted that parents who had been enrolled in the Rural Child Care Project for more than a year ("Old Admissions" group, N=35) would differ in their awareness and utilization of community resources (i.e., food, medical, clothing, home repair, educational services and parent group participation) from parents newly enrolled in the Project ("New Admissions" group, N=46). Chi Square (according to procedures specified by Siegel, 1956) was employed for these comparisons and $\rho < .05$ was the chosen level of significance for all analyses.

In general no differences were found between these two groups in their responses to any of the CSII items. However, proportionately more Old Admissions group than New Admissions group parents reported using home repair and improvement resources ($\chi^2 = 38.59$, df = 1, $\rho < .001$). In this instance, therefore, Hypothesis 3a is supported.

Hypothesis 3b

The predictions were the same as those in Hypothesis 3a with comparisons made in the Old Admissions group according to their Project social services designation. That is, "social work contact" parents (N=18) were expected to be more aware of and using community resources to a greater extent than those parents designated to receive "homemaking" (N=12) services. This prediction was based on the assumption that social worker contact families are more adequate than families who need homemaking services and that this "adequacy" factor will outweigh the impact of Project social services per se.

Because of the small numbers of subjects involved in these analyses, Fisher's Exact Test of Probability (Seigel, 1956) was employed. The only significant difference emerging from these comparisons occurred in terms of parents' reported use of medical resources. Specifically, the homemaking group was more likely to use medical resources than the social work contact group ($\chi^2 = 5.79$, df = 1, $\rho < .03$).

Because parents differed in terms of their use of housing repair resources as a function of the length of their Project experience (see Hypothesis 3a findings), this difference was re-examined in terms of social service experience. It was noted that in the Old Admissions group, parents receiving homemaking or combined social services were more likely to use this resource than social work contact parents.

Thus, Hypothesis 3b is rejected by these data.

Hypothesis 3c

Utilizing the same design as above, a final set of comparisons was run between parents receiving homemaking services (N=12) and those assigned to receive combined social work and homemaking services (N=5) within the Old Admissions group. It was expected that if Project social service designations are a reflection of family adequacy, then awareness and utilization of community resources would be higher among the homemaking group.

Despite the predictions, these two groups differed from each other only in terms of their participation in Rural Child Care Project parent group meetings. Parents receiving only homemaking services were more likely to attend meetings than "multiproblem" parents ($p < .01$, Fisher's Exact Test). Multiproblem parents stated that they did not attend because they were not "interested" and the meetings "accomplished no purpose".

Therefore, support for this hypothesis rests solely upon the variable of Project parent group participation. Due to the very small number of multiproblem parents (N=5) included in the sample, the reliability and validity of such a result are in question.

DISCUSSION

Several general conclusions are suggested by the preceeding findings. It is clear that this sample as a whole represents a more cooperative, outgoing segment of parents enrolled in the Rural Child Care Project program during 1969-1970, considering the large number of parents who were initially eliminated from the subject lists and the additional number of parents who were scheduled for interviews but could not be seen. Bearing this limitation in mind,[1] it may be said that these Project parents in general learned about community resources and established their patterns of utilization of such services prior to entering the Project. Whether those parents not interviewed would have presented the same pattern cannot be answered at present.

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[1] as well as the general limitation imposed by the lack of any "pre-test" data in this study. By asking parents to recall their utilization of resources prior to and following enrollment in the Project, error due to recall factors undoubtedly was introduced into these data.

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There is little support for the notion that the social service designations assigned to families when they enter the Project reflect family adequacy in meeting basic human needs. There is evidence to suggest that families who vary in adequacy and type of Project services received differ little in their awareness of community resources. The finding that homemaking families use medical services more than social worker contact families and that higher proportions of homemaking and multiproblem families use home repair services, may reflect the fact that families in the Project are helped to obtain those kinds of service which they most need.

This study indicates that as a whole these Project parents have high educational aspirations for themselves and their children. There is no relationship between educational aspirations or recent achievements in this area (i.e., since entering the Project) and length of Project participation or type of social service received. In general, relatively few of these parents reported completing GED's or taking additional educational or vocational training since entering the Project, despite their aspirations. It is difficult to evaluate this finding, however, without having comparison data available on this variable for a similar sample of parents of young children who are not affiliated with a full year Head Start program. The finding does raise the question of whether parents are receiving sufficient assistance from Project staff in planning and achieving educational or vocational training objectives through local community resources available to them. When the emphasis upon career development of Project staff is considered (see Archambo and Briscoe, 1970, Volume I), the implications of this finding are even more serious.

It is of concern that multiproblem families were more negative in their attitudes towards attending Project parent group meetings and that they in fact attended such functions less than homemaking parents. This is the only area in which the least adequate parents reported clearly negative attitudes and appeared to avoid using a resource for other than practical reasons, such as schedule conflicts or transportation problems. If this finding, based upon a very small sample, holds for larger numbers of multiproblem parents in the Project, is would be imperative to explore ways in which such parents might be involved more effectively in the Project. It would be useful to determine if such negative attitudes are primarily the result of the isolation such persons experience or whether their relationships with Project staff contribute to these negative feelings.

There is no evidence that length of Project affiliation is related to parental awareness of any community or school-related resources asked about in the CSII. With the exception of use of home improvement and repair services, longer Project exposure does not seem to be related to use of community and school resources. It may well be that parents have to be enrolled in the Project for a minimum period of time, as yet unspecified, before information regarding resources and the opportunity for their utilization can have an impact. It should be clear from this

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study that despite a certain "uniformity" among parents in terms of their meeting OEO guidelines for admission to a Head Start program, they are quite heterogeneous in terms of coping skills. For some parents, typically those who are maintained on social work contact services, enrollment in the Project adds little to their ability to function within the community. For other parents, especially those designated to receive homemaking services and more intensive assistance, additional needs are met by enrolling in the Project. It would be useful at this juncture in the Project's development of staff skills and service priorities to determine which needs are already being met or could be met by other agencies so that casework plans for Project families can be increasingly tailored to include only those services which Project personnel can provide. In addition, there is indirect evidence to suggest that the utilization of some resources (e.g., medical services) may be increased simply because Project workers are available to provide transportation to a clinic or agency. In these cases, the developing volunteer program within the Project could be assigned these kinds of responsibilities to free Social Workers and Homemakers for the more basic tasks of informing and motivating parents to take advantage of resources for which they are eligible and which contribute to increased family adequacy.

III. Hypotheses 4-9: The Mother Training Project.

Hypothesis 4a states that,

> "Mothers of families newly enrolled in the Project will score significantly lower on the Wechsler Adult Intelligence Scale (WAIS) than a comparison group of middle class mothers indigenous to Eastern Kentucky. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, Project mothers will show a significant increase in Performance Scale I.Q. scores on WAIS post-test. They will still score significantly lower than the middle class mother comparison group tested initially, however."

Hypothesis 4b states that,

> "Whereas child development center Teachers will score significantly higher on the WAIS than newly enrolled Project mothers, they will score significantly lower than a comparison group of middle class mothers indigenous to Eastern Kentucky. Newly enrolled Project mothers, following six months of intensive exposure to the Project, including attendance by their children of a minimum of 100 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, will still score significantly lower on WAIS post-test than child development center Teachers, but only on the Verbal and Total Scales."

Hypothesis 5a states that,

> "Mothers of families newly enrolled in the Project will be significantly more status-oriented in their attitudes toward the education of young children and involvement with school personnel and they will be significantly lower in educational aspirations for themselves and their children in comparison to middle class mothers indigenous to Eastern Kentucky and to child development center Teachers. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers

> and exposure of their families to Project social services, Project mothers will be significantly more person and instructive-oriented in their attitudes toward the education of young children and involvement with school personnel and they will significantly increase their educational aspirations for themselves and their children."

Hypothesis 5b states that,

> "Mothers of families newly enrolled in the Project and who receive training as a Teacher Aide Volunteer will not differ initially in their attitudes toward the education of young children, involvement with school personnel, or in educational aspirations for themselves and their children in comparison to a comparable group of mothers who receive training as volunteers in capacities other than Teacher Aides. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, these mothers will show significantly greater person and instructive orientations in their attitudes toward the education of young children and involvement with school personnel and they will be significantly higher in their educational aspirations for themselves and their children than those mothers who did not receive training as a Teacher Aide Volunteer."

Hypothesis 6a states that,

> "Mothers of families newly enrolled in the Project will be significantly less effective in a semi-structured task situation in comparison to middle class mothers indigenous to Eastern Kentucky and to child development center Teachers; that is; they will use less positive reinforcement, more non-constructive negative criticism, give less task information, ask fewer questions of the child, offer less general encouragement and use more imperatives than instructives when teaching their child a series of simple tasks. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, these mothers

> will show a significant increase in teaching effectiveness toward the level initially displayed by middle class mothers and the level displayed on the post-test by child development Teachers; that is, they will use more positive reinforcement, more constructive negative criticism, give more task information, ask more questions of the child, offer more general encouragement and use more instructives than imperatives when teaching their children a similar series of simple tasks."

Hypothesis 6b states that,

> "Child development center Teachers will be significantly more effective in teaching a series of simple tasks to Project children than newly enrolled Project mothers who are asked to teach the same tasks to their children, but they will be less effective than a comparison group of middle class mothers indigenous to Eastern Kentucky. Following six months of intensive training experience with Project mother volunteers, child development Teachers will show significant improvement in their teaching effectiveness, especially in terms of increased verbal elaboration."

Hypothesis 6c states that,

> "Mothers of families newly enrolled in the Project and who receive training as Teacher Aide Volunteers will not differ initially in their teaching effectiveness in comparison to a comparable group of mothers who receive training as volunteers in capacities other than Teacher Aides. Following six months of intensive exposure to the Project, including attendance by their children of a minimum of 60 days in a child development center, participation by the mothers as volunteers in the centers and exposure of their families to Project social services, these mothers will show significantly greater improvement in teaching effectiveness, especially in terms of increased verbal elaboration, in comparison to those Project mothers who did not receive training as Teacher Aide Volunteers."

Hypothesis 7a states that,

> "Children newly enrolled in the child development centers will score significantly lower on the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)

than a comparison group of middle class children indigenous to Eastern Kentucky. Following six months of intensive exposure to the Project, including minimum attendance of 60 days in a child development center, participation by their mothers as volunteers in the centers and exposure of the family to Project social services, these children will show a significant gain on all scales of the WPPSI. They will still be significantly lower on the Verbal Scale of the WPPSi than the middle class comparison group tested initially, however."

Hypothesis 7b states that,

> "Children newly enrolled in a child development center and whose mothers receive training as Teacher Aide Volunteers will not differ initially on any scales of the WPPSI from a comparable group of children whose mothers receive training as volunteers in capacities other than Teacher Aides. Following six months of intensive exposure to the Project, including minimum attendance of 60 days in a child development center, participation by their mothers as volunteers in the centers and exposure of the family to Project social services, these children will score higher on the Verbal and Total Scales of the WPPSI than those children whose mothers did not receive training as Teacher Aide Volunteers."

Hypothesis 8a states that,

> "Children newly enrolled in the child development centers who are taught a series of simple tasks by their mothers will make significantly more errors, fewer correct responses, and be less able to verbalize the learning principles than a comparable group of children taught by child development center Teachers or a comparison group of middle class children indigenous to Eastern Kentucky taught by their mothers. Following six months of intensive exposure to the Project, including minimum attendance of 60 days in a child development center, participation by their mothers as volunteers in the centers and exposure of their families to Project social services, these children will show significant improvement in their task performance and ability to verbalize the learning principles. Their performance will still be lower than that of the

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> middle class children initially tested. These children will not differ from comparable children taught by child development center Teachers on post-test in terms of errors, but they will be significantly less able to verbalize the learning principles."

Hypothesis 8b states that,

> "Children newly enrolled in the child development centers and whose mothers receive training as Teacher Aide Volunteers will not differ initially in their task performance when taught by their mothers from a comparable group of children whose mothers receive training as volunteers in capacities other than Teacher Aides. These children will perform less well than a comparable group of children taught the tasks by child development center Teachers. Following six months of intensive exposure to the Project, including minimum attendance of 60 days in a child development center, participation by their mothers as volunteers in the centers and exposure of their families to Project social services, these children will perform as well as comparable children taught the task on post-test by child development center Teachers and they will perform significantly better, especially in verbalizing the learning principles, than comparable children taught by their mothers who did not receive training as Teacher Aide Volunteers."

Hypothesis 9 states that,

> "Child development center Teachers will be less favorable toward the use of Project mothers as Teacher Aide Volunteers before than after a six months period of intensive volunteer training. Positive evaluation of their volunteer experience and willingness to continue as center volunteers is expected to be greater among Project mothers trained as Teacher Aide Volunteers than among those trained in other volunteer capacities and, within the Teacher Aide Volunteer group, among those mothers who show the greatest gains on teaching style variables."

METHOD

Hypotheses 4-9 represent various aspects of a single study undertaken in the current contract year. Called "The Mother Training Project", this investigation was designed to evaluate the ability of Project mothers to interact effectively with their preschool children in learning situations. Project Teachers and indigenous middle class mothers served as comparison groups. Of equal interest was whether Project mothers and Teachers might both improve their teaching skills as the result of training done by the Teachers.

The study reported here was carried out over a period of nine months (September, 1969 - May, 1970) and involved three basic phases: pretesting, mother training and post-testing. Because of various problems stemming from funding uncertainties (which persisted from July, 1969 until April, 1970), the unavailability of the Project staff during the summer months due to a cut in funds, and the newness of these procedures, implementation of the mother training phase (during December - May) proved to be more difficult and progressed more slowly than anticipated. Therefore, although this study represents a valuable "first step" toward equipping Project child development staff to train Project parents to support and extend the learning experiences of their children, it should be regarded as a pilot project rather than a formal investigation.

Subjects

Beginning in September, 1969, a list was prepared of all families enrolled in the Rural Child Care Project between mid-May, 1969 and September, 1969.[1] New Project mothers and their children were then selected for the Mother Training Project if they met the following criteria: (a) The mother was between 20 and 35 years of age and the child was between four and five years of age.[2] (b) The child was attending a child development center regularly. (c) The mother could participate regularly in the child development center volunteer program. (d) The mother and child were born, raised and/or primarily identified with the Appalachian eastern Kentucky region.

A total of forty Project mothers and their children in nine counties[3] met these criteria and were scheduled for pretesting. In two instances where the child refused to be tested, an older sibling who met the above criteria was substituted. Eight Project mother-child pairs

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[1] Recruitment of new families was delayed until fall in some counties by the closing of all centers during the summer months brought about by a cut in Head Start program funds.

[2] No Project mother selected for the sample was less than 20 years of age, but 11 mothers were more than 35 years of age, the oldest mother being 40 years old. In the children's sample, three were less than four years of age and 23 were more than five years old at the time of pretesting. These departures from sample age criteria as originally proposed (Archambo, 1969) were necessitated by the small number of available subjects.

[3] In Knott county, no families were eligible for the Training Project sample.

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were dropped from the study for the following reasons: refusal to cooperate, personal problems (alcoholism and emotional difficulties), or husband's refusal to allow the mother and child to participate. Substitute pairs were found in four cases. In the other four cases, no alternates were available or the alternate pair proved untestable for one of the above reasons.

Thus, a total of 36 Project mother-child pairs (15 boys and 21 girls) were administered the pretest instruments specified for Hypotheses 4-9 (see Instruments).

Twenty Project Teachers were selected by the Project Director, Educational Specialist or a Regional Training Supervisor to participate in the Mother Training Project on the basis of their competence, enthusiasm and ability to undertake the demands of the project. Since most Project Teachers are older than most Project mothers, it was not possible to adhere to the same age criterion set for the Project mothers.[1] A total of 20 Project children (11 boys and 9 girls) to be tested with the Project Teachers were selected on the basis of the same criteria as the children of Project mothers included in the sample.[2]

The middle class comparison group of mothers and children specified for Hypotheses 4-8 was obtained through three private or univesity affiliated preschool and kindergarten facilities located within eastern Kentucky. Directors and head teachers of those programs solicited participation from those families in their program who met the same criteria established for Project mothers and Project Teachers.[3] Middle class children were between four and one-half and six years of age (since they were tested only once and served as a criterion group for Project children on pre- and post-tests). No middle class mother-child pairs were included in this sample unless their family income exceeded the OEO poverty guidelines and the father's profession was clearly "middle class." Most participants in fact were professionals or students preparing for professions in education. However, mothers who had taught preschool or kindergarten classes were excluded from the sample.

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[1] Of the twenty Project Teachers selected for the Mother Training Project 14 were over 35 years of age. The oldest was 57.

[2] Of the children tested with a Project Teacher, none were less than four years old at time of testing and only eight were more than five years of age.

[3] Of the 15 middle class mothers tested, three exceeded the age of 35 years. The oldest mother in this sample was 42 years of age. No mother was less than 20 years old.

Table 16 presents a summary of mother (Teacher)-child pairs for whom Mother Training Project pretest data were obtained. Although the design for the Mother Training Project specified that there should be a minimum of two Project mothers and one Project Teacher within each participating child development center,[1] Table 16 indicates that this result was not obtained in all cases due to the inability of some pairs to participate in or to complete pretesting. However, in other centers, as many as four mother-child pairs (hence two Teacher-child pairs) were available. Because of the limited numbers of Project mother-child pairs eligible for this study, it was decided to retain those centers which had only one Project mother-child pair participating. In all such cases, this mother received training from the Teacher.

As Table 16 shows, sample selection procedures and attrition at the time of pretesting produced more boys than girls in the Project Teacher group, more girls than boys in the Project Mother group and virtually equal numbers of boys and girls in the Middle Class sample.

In order to obtain two groups of Project mothers, the Teacher Aide Volunteers (experimental) and Other Volunteers (control) as specified in the design for Hypotheses 4-9, after pretesting mothers were assigned randomly to experimental and control groups and to the Teacher within their center who was to train them (experimental group only) with the restrictions that the number of experimental and control mothers should be balanced within each center (where more than one mother was a participant) and that the numbers of boys and girls should be as equal as possible in both groups. Twenty Project mothers were assigned to the Teacher Aide Volunteer Group (8 boys, 12 girls) whereas 16 mothers were designated as Other Volunteers (7 boys, 9 girls).

It was learned after pretesting was completed that two Project mother-child pairs and two children paired with Project Teachers had been enrolled prior to the summer or early fall of 1969, which violated the sample selection criteria. This error occurred during field testing when substitutions had to be made and the Research staff relied upon the knowledge of Project staff concerning whether or not a given child or Project mother-child pair was "newly enrolled." Project records for these cases were examined as soon as the errors were discovered. It was determined in all cases that attendance at a center by children in the family or exposure of the family to Project social services was limited to two months or less. One child paired with a Project Teacher was a foster child whose foster parents had prior contact with the Project through two previous foster children. Because the prior exposure to the Project was minimal in these cases it was decided to retain them in the sample.

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[1] One Project mother (experimental group) was to be trained in the use of teaching skills by a Project Teacher while the second Project mother (control group) participated in the ongoing volunteer program with no special training in teaching skills (Archambo, 1969).

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TABLE 16: HYPOTHESES 4-9: MOTHER TRAINING PROJECT ADULT-CHILD PAIRS BY GROUP, COUNTY, CENTER (FACILITY) AND SEX OF CHILD. PRETEST SAMPLES.

County	Center	Project Mothers Boys	Project Mothers Girls	Project Mothers Total	Project Teachers Boys	Project Teachers Girls	Project Teachers Total
Elliott	Cliffside	1	1	2	1		1
	Bruin	1		1	1		1
Floyd	Auxier	1	1	2	1		1
	McDowell	1	1	2		1	1
Harlan	Sunshine	1	1	2	1		1
	Black Mountain	1	1	2		1	1
	Ages	2		2	1		1
Lee	Southside	1	1	2	1		1
	St. Helens		1	1		1	1
Letcher	Fleming		2	2		1	1
	Blackey		1	1	1		1
Magoffin	Swampton		2	2	1		1
	Salyersville		2	2	1		1
Morgan	Ezel	1	1	2		1	1
Owsley	Booneville	2	2	4	1	1	2
	Sturgeon	1	1	2	1		1
Wolfe	Hazel Green	1	1	2		1	1
	Campton	1	2	3	1	1	2
	Totals:	15	21	36	11	9	20

County	Facility	Middle Class Mothers Boys	Middle Class Mothers Girls	Middle Class Mothers Total
Rowan	Morehead State University - Breckenridge Kindergarten	3	4	7
Madison	Union Church Kindergarten - Berea	4	4	8
Madison	Eastern Kentucky University Demonstration School (Kindergarten/Preschool) - Richmond	3	3	6
	Totals:	10	11	21

Tables 17 and 18 present a summary of demographic data obtained for the pretest samples. Project mothers and Teachers meet the general sample criteria for birthplace, socioeconomic status, years of education and prior Project experience specified in the Rural Child Care Project 1969-1970 Research Proposal (Archambo, 1969). The middle class group is somewhat higher in SES than anticipated and somewhat less apt to have been born and raised within eastern Kentucky or the Appalachian region. This is due to the fact that this sample was obtained from educational institutions where there is a considerable representation of persons from outside the region.

During the pre- and post-test interim, one Project Teacher-child pair was dropped from the study due to the closing of the Ages Center in Harlan county. A total of eight Project mother-child pairs did not continue participation or could not be seen at post-testing for the following reasons: refusal to cooperate with Project Teacher or Research staff (N=2), closing of the Ages Center (N=2), serious illness of mother (N=1), family moved out of the area (N=2), mother began full-time employment (N=1). Because a number of these mothers who had been assigned to the experimental group were dropped early in the training phase, it was possible to shift some of the control Project mother-child pairs to the experimental group, which in turn enabled the Project Teacher in that center to continue her participation as a trainer in the study. Only one Teacher was consistently unable to establish any kind of a training program with her assigned Project mother. She was retained as a participant, however, because near the end of the training phase she was able to engage a non-participating Project mother in training sessions. This same Teacher attended both training sessions (see pp. 76 - 78) and was highly motivated to succeed despite her difficulties.

Attrition within the middle class sample was not a problem since this group was tested only once, at pretest.

Table 19 presents a summary of the Project mother-child (experimental and control groups) and Project Teacher-child pairs who were seen at post-testing and for whom both pre- and post-test measures were available to evaluate the impact of the Mother Training Project. Whereas the sex ratio is nearly 1:1 in the Project Teacher group, the Project mother experimental and control groups both have relatively more girls than boys.

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TABLE 17: HYPOTHESES 4-9: DEMOGRAPHIC INFORMATION FOR PROJECT MOTHERS, PROJECT TEACHERS AND MIDDLE CLASS MOTHERS AT PRETEST[1]

	Per Cent Born in				Per Cent in SES Categories								
	E Ky	Ky	Appal. Region	Other	1	2	3	4	5	6	7	8	9
Project Mother (N=36)	86.11	5.55	2.77	5.55	0.00	0.00	5.55	5.55	19.44	33.33	13.88	19.44	2.77
Project Teacher (N=20)	90.00	0.00	5.00	5.00	0.00	10.00	10.00	10.00	40.00	0.00	10.00	0.00	20.00
Middle Class Mother (N=21)	61.90	14.28	9.52	14.28	42.85	23.80	19.04	4.76	9.52	0.00	0.00	0.00	0.00

	Per Cent in Welfare Categories				Per Cent in Marital Status Categories				
	1	2	3	4	1	2	3	4	5
Project Mother (N=36)	30.55	2.77	0.00	66.67	80.55	8.33	8.33	0.00	2.77
Project Teacher (N=20)	0.00	10.00	0.00	90.00	95.00	0.00	0.00	0.00	5.00
Middle Class Mother (N=21)	0.00	0.00	0.00	100.00	100.00	0.00	0.00	0.00	0.00

	Years of Education		Per Cent Obtaining General Equivalency Degree (GED)	Parents' (Teacher's) Previous Project/Preschool-Kindergarten Participation[2]
	Mean	SD		
Project Mother (N=36)	8.92	2.23	2.77	2.17
Project Teacher (N=20)	12.05	1.28	10.00	3.35
Middle Class Mother (N=21)	15.48	1.57	0.00	

[1] See Table 18 for an explanation of abbreviations and demographic categories.

[2] Participation is given in mean number of months since intake for Project Mothers and in median number of years for Project Teachers. Information available for the middle class sample indicated half of the mothers had four months experience with preschool or kindergarten programs whereas the rest had participated one or more years (with the present child and older siblings).

TABLE 18: KEY FOR INTERPRETATION OF DEMOGRAPHIC INFORMATION PRESENTED IN TABLE 17

Birth Place

E Ky = Eastern Kentucky, principally the ten county region served by the Rural Child Care Project and all other counties within the Appalachian section of eastern Kentucky.

Ky = Kentucky, principally the area lying outside the Appalachian region of eastern Kentucky.

Appal. Region = a state within the Appalachian region, typically a state within this region and adjacent to Kentucky.

Other = State outside Kentucky and the Appalachian region.

Socioeconomic Status (SES) Categories[1]

1 = High Executives
2 = Business Managers
3 = Lesser Professionals
4 = Clerical-Sales Workers
5 = Skilled Manual
6 = Semi-Skilled
7 = Unskilled
8 = Unemployed
9 = Retired

Welfare Status Categories

1 = Receives Total Support
2 = Receives Partial Support
3 = AFDC - WIN Program
4 = No Assistance Received

Marital Status Categories

1 = Married-Husband Present
2 = Separated
3 = Divorced
4 = Widowed
5 = Single

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[1] Hollingshead, A.B., *Two factor index of social problems*, New Haven, Conn., 1957, was used to determine the first seven categories. Categories 8 and 9 were added. In all cases where a husband was present, SES designations were based upon his status. Where a husband was not present, SES was based upon the wife's status.

TABLE 19: HYPOTHESES 4-9: PROJECT MOTHER AND PROJECT TEACHER GROUPS AT POST-TEST[1]

PROJECT MOTHER				PROJECT TEACHER	
Experimental Group		Control Group			
Male Child	Female Child	Male Child	Female Child	Male Child	Female Child
7	10	4	7	10	9
Totals: 17		11		19	

[1] The Middle Class Group was not retested.

Instruments

The 1955 edition of the Wechsler Adult Intelligence Scale (WAIS) was administered on pre- and post-test to Project mothers and Teachers (and to middle class mothers only on pretest). Each child was given the Wechsler Preschool and Primary Scale of Intelligence (WPPSI) on pre- and post-test (middle class children were tested only once at pretest). Standardized procedures set forth in the manuals for these instruments were followed.[1]

"The Attitudes Interview" (see Appendix D), designed by members of the Research Division staff,[2] was administered on pre- and post-test to all Project mothers and Teachers (as well as middle class mothers on pretest). Project Teachers were given the "CDC Teacher Interview: Attitudes Towards Project Volunteers" (see Appendix E) at pretest.

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[1] Extensive training in the administration of these standardized instruments was undergone by each member of the Research Division staff beginning early in August, 1969. Mrs. Allie Hendricks, a certified psychometrician, served as a consultant during this training period. Examiners routinely used probing and change in order of subtest administration where it seemed necessary to insure an optimum pretest result. Most WAIS's were administered by the same male and female examiners and most WPPSI's were administered by two different examiners, one male and one female. Interestingly enough, it was discovered that most children who refused testing initially were those tested by a male rather than a female examiner. However, this may have been a function of testing skill as much as the examiner's sex or other physical characteristics.

[2] It incorporated items based upon work by Hess _et al_ (1968) (items 5, and 12-20). Separate forms were used for Project Teachers and mothers (Project and Middle Class).

This is a shorter interview, also constructed by the Research staff. The first interview focusses upon the adult's attitudes toward educating and training young children, involvement with school personnel, and educational aspirations. The second interview probed the Teacher's views of the advantages and disadvantages of the Project volunteer program.

On post-test, Project Teachers received the second half of the "CDC Teacher Interview: Attitudes Towards Project Volunteers" (items 10 -25, see Appendix E) which assessed their reactions to training experiences with the Project mothers (experimental group mainly) assigned to them in this study. Project mothers were given the "Evaluation of Volunteer Experience" interview at post-test to determine their reactions to being trained as a Teacher Aide Volunteer or serving as an Other Volunteer during the current study (see Appendix F).

The OEO Office of Planning, Research and Evaluation and the Appalachian Regional Commission reviewed the above instruments. However, formal approval for their use as constructed could not be obtained prior to pretesting due to the uncertain status of the Research contract during that period.

All adult-child pairs were administered the "Teaching Tasks" on pre- and post-test. These three tasks consist of two sorting "games" adapted from Hess et al (1968) and one block building task taken from the work of Bee et al (1969). Alternate forms were prepared for each of these tasks so that approximately half of all adult-child pairs would receive form A on pretest and form B on post-test with the remaining pairs receiving form B on pretest and form A on post-test. The first task, which is the least complex, consists of objects (chairs, spoons, cars; planes, tables, cups) which are to be sorted according to color (blue, yellow, red; white, black, green) or type of object into three groups. The second task, which is the most complex, requires that the child learn to sort four blocks on the basis of two characteristics (symbol and height or color and shape) and to verbalize the complete sorting principle. On both forms of this task, two of the four possible sorting dimensions (symbol, color, shape, size) are irrelevant. The third task, which is difficult to execute, provides the child with various sizes, shapes and colors of wooden Playskool-type blocks that he is to build into a "house" which matches a preconstructed model he may refer to throughout the task. Complete instructions for the Teaching Tasks are found in Appendix G.

Procedure

Pretesting of Project mothers, Teachers and children was done concurrently on a center by center basis from mid-October, through December, 1969. Testing was done in child development centers, Project county offices, nearby churches, schools and community buildings, and Project Teacher's homes.

The middle class sample, tested only once during December, 1969, and January, 1970, was seen in rooms at their preschool or kindergarten facilities.

Two sessions, usually scheduled for two consecutive days, were utilized for pretesting. Session I involved the administration of interviews (the Attitudes Interview was recorded) and the WAIS to the adults while children were given the WPPSI. During Session II the adult-child pairs were administered either form A or B of the three Teaching Tasks.[1] In this session, the examiner brought the adult into the testing room, which was usually equipped with a table and several chairs, and demonstrated to her the nature of the first task (see Teaching Tasks Instructions, Appendix G). An observer remained outside the room with the child member of the pair who was entertained with a simple puzzle and some crayons. When the adult had been instructed about the nature of the task and she understood she was to teach it to the child in any way she liked so that he could perform it correctly for the examiner, the child was brought into the room. During the task situation, the verbal interaction was recorded, the examiner noted the occurrence of specified non-verbal behaviors (mainly the adult's) at 10 second intervals, and the observer, speaking into a Steno-Mask unit, recorded a description of the interaction for later use in the interpretation of the verbal interaction transcript. At the conclusion of the first two teaching tasks[2](Toy and Block Sorts), the child was scored according to his ability to use and verbalize the sorting principle in response to questions from the examiner. In the third task (Block House) the child was scored for the adequacy of his construction.

Efforts were made initially to test only during the morning hours to offset fatigue in the children. However it was found to be more efficient to test during both morning and afternoon and this change did not appear adverse for most of the children. Because of scheduling and rapport problems (with some children) the order of Sessions I and II was reversed in five instances in the total Project sample. Several pairs were tested in the same day with no ill effects. Therefore, it was decided to schedule adult-child pairs for one day sessions on posttest, although an effort was made to administer Session I tests and interviews prior to Session II tasks to preserve the order of administration established at pretesting. Typically Session I required two hours for adults (this varied on post-test because of additional interview items) and one hour and a half for children. Session II required thirty to forty-five minutes.

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[1] For any adult-child pair, the Teaching Tasks were all of the same form (A or B) and were administered in the same order, i.e., Toy Sort, Block Sort, Block House. Seventeen Project mothers and ten Project Teachers had form A on pretest; eleven Project mothers and nine Project Teachers had form B on pretest.

[2] The adult terminated her "teaching" when she felt the child had learned the task and could perform correctly for the examiner. If neither adult or child was attempting to perform as instructed or if a fifteen minute maximum time limit was reached, the examiner terminated the teaching phase and proceeded to question and score the child.

Post-testing of Project Teacher-child pairs was accomplished in April and postponed for Project mother-child pairs until May to allow them maximum time for participation in the training phase of the study, since it had been delayed in starting. The same procedures were followed as indicated for pretesting with two exceptions: Testing was completed for most pairs in one day instead of two (as mentioned above). Session I included the administration of additional items on the "CDC Teacher Interview: Attitudes Toward Project Volunteers" (see Appendix E) to Teachers and the "Evaluation of Volunteer Experience" (see Appendix F) to Project mothers.

In accordance with the proposal for this study (Archambo, 1969), the middle class comparison group was not included in post-testing. Contrary to the proposal, however, Project Teachers were retested. This decision was prompted by the observation that Teacher's scores and attitudes on pretest instruments were not as different from Project mothers as expected. Examiner reports indicated rather clearly that Teachers were extremely anxious about being tested, which may have depressed their scores. Therefore it was of interest to determine what changes they had made as a function of their participation in the study and their greater familiarity with the testing situations.

Pre- and post-test data were collected by a team of four Research Division staff members (assisted by the Research Director and Research Associate). One male and one female examiner administered WAIS's and another male and female examiner gave most of the WPPSI's on pretest. This procedure was based upon examiner preference for testing adult or child subjects. On post-test, however, a new female examiner replaced an assistant who had resigned. In addition, there was a tendency for at least three of the examiners to administer both WAIS and WPPSI's. This was partly due to scheduling problems and the restriction that adults and children were not to be tested by the same examiner on pre- and post-tests.[1] It should be noted that while on pretesting examiners had no idea which Project mothers would be selected for the experimental group, they were aware of these designations on post-test (especially since they were used in the adult interviews).

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[1] Only one child was tested twice by the same examiner during Session I (intelligence testing). It was much more difficult to avoid examiner repetition on Session II (Teaching Tasks) because two examiners were required to administer it. In one instance, a Teacher-child pair was inadvertently administered form A of the Teaching Tasks on pre- and post-test.

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Teacher Training Sessions

Two in-service training sessions were held for Project Teachers participating in this study. Each session lasted a full day. The first was held in mid-January (Campton, Wolfe county) and the second was held in mid-March (Whitesburg, Letcher county). The purpose of these training sessions was to emphasize the objectives of the Mother Training Project (specifically Hypothesis 6) and to go over procedures and the time table to be followed in attaining these objectives. Appendix H presents the agenda for each training session, a handout concerning the teaching skills which were to be taught to the Project mothers (Teacher Aide Volunteers or experimental group), the suggested training schedule, and a monthly report form which Teachers were to use in communicating their progress and problems to the Research Director.

Because of the newness of the procedures entailed in the Mother Training Project and the heavy demands this study placed upon the Teachers, there was mutual recognition on their part and by the Research Division staff that such sessions would be necessary. Despite severe winter weather and transportation difficulties, all participating Teachers attended the January session. Several had to miss the March session. However, all but one attended a make-up session in Lexington the following week.

Present at the training sessions was Mrs. Beulah Hardge, a consultant from the Demonstration and Research Center for Early Education (DARCEE) at George Peabody College for Teachers in Nashville, Tennessee. Mrs. Hardge is an experienced home teacher in the DARCEE programs and was adept in showing these Teachers with non-professional backgrounds how to train mothers to use teaching skills with preschool children.

In addition to discussion of objectives and solutions to common problems voiced by the Teachers, the techniques of demonstration and role play were utilized to determine how well the Teachers understood their assignment and to help them gain confidence in carrying out their training role with the Project mother assigned to them. Small group role play sessions dealt with each phase of the suggested training schedule. Teachers were asked to bring simple materials and activities (which they had used and/or developed themselves in their centers) for use in these role play sessions. This was done to emphasize that teaching mothers how to use materials was secondary to teaching them how to use effective skills regardless of the activity *per se* (i.e., reinforcement, verbal elaboration, questions, structuring the setting, constructive criticism).

Because prior training sessions in the Project had emphasized developing activities and materials, it was anticipated that the stress given to the use of teaching skills and the Teacher's role as a "trainer" in this study would represent a difficult shift in role emphasis for most Teachers. It was appparent from the training sessions and monthly reports submitted by the Teachers to the Research Director that a number of problems were interferring with the implementation of the Mother Training Project procedures. A basic problem was that many Project mothers did not come to the centers at a regular time so that it was difficult for the Teacher to arrange with her staff ahead of time to be free to work with the mother. It was also difficult for the Teacher to have her activity with the mother planned in advance under these circumstances.

A second major problem was that most Teachers did not realize to what extent they would have to work with the mother prior to having her conduct activities with the children. They did not realize that evaluation after an activity would be necessary in order to help the mother develop proficiency in teaching and confidence in her ability. Most Teachers reported what the mother did well without mentioning any strategies they might follow to help her overcome weaknesses they noted. Many reports gave the impression that the Teacher was merely an observer rather than a trainer of teaching skills.

Somewhat related to these problems was the fact that many Teachers did not plan their activities with the mothers in advance, nor did they set objectives for themselves or the mother. They did not convey to the mother a sense of progressing through the phases of gaining proficiency in the teaching skills. Some Teachers focussed the mother's efforts toward use of materials rather than teaching skills. Often the activities were far too complicated and prevented the mother from paying attention to the use of teaching skills during the activity. In essence, some Teachers and mothers were "stimulus-bound" and unable to concentrate on the basic processes of teaching.

These problems were expected. It is no discredit to the Teachers that they arose. However, their existence underscored the necessity for instituting this type of training within the Project. Until Teachers can relate media to process in learning situations with children there is little hope that educational input within the Project will have the desired effect nor that it will be appropriate to the heterogeneous needs and ability levels of Project children.

In order to help the Teachers overcome these problems, the training session focussed upon the use of role play to demonstrate why it is important to rehearse an activity carefully with a mother before she uses it with the children. It became apparent that several Teachers had not been able prior to this experience to put themselves in the place of their Project mother. They had been bewildered by the lack of understanding and confidence displayed by some Project mothers, but they had not understood how careful planning on their part might overcome these problems. In addition to role play, the Teachers benefitted from group discussion of their common problems. In this discussion it was emphasized that each Teacher had to take a more aggressive role in getting

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her Project mother to come in at a mutually agreed-upon time. She had to take the initiative in arranging with her staff to free her to work with the mother. A major attempt was made in role play and discussion to show how the setting of objectives is related to the kind of progress made in learning to use the teaching skills.

Due to funding uncertainties the type of on-the-job training anticipated for this study was not provided. The consultant was engaged only on a minimal basis and the amount of funds available for travel to individual centers for training purposes was limited.[1] Therefore, it should be realized at this point that the Mother Training Project can only be evaluated as a pilot program. Its results should be considered as incomplete and suggestive rather than conclusive. Great credit is due the individual Teacher participants who have carried out these procedures with enthusiasm and determination despite such minimal assistance.

RESULTS

Hypotheses 4-9 represent various aspects of the Mother Training Project. Therefore, the findings related to each of the predictions stated in these six hypotheses are presented in sequence, followed by a discussion of the results as a whole and some conclusions regarding the Mother Training Project.

Various parametric and non-parametric statistical analyses have been employed with these data. The chosen level of significance for all analyses is $\rho < .05$. Findings reported are based upon subjects who were tested twice (pre- and post-tests) unless otherwise indicated.[2]

Hypotheses 4a-4b: Intellectual Change in Adult Participants

Three general predictions were made in these hypotheses. First, it was anticipated that there would be group differences in WAIS I.Q. scores. That is, middle class mothers, Project Teachers and Project mothers were expected to perform on the WAIS in that order and all group differences were expected to be significant. Second, it was predicted that Project mothers (experimental group only) would show a significant increase in I.Q., especially on the Performance Scale, as a function of exposure to the Mother Training Project. However, it was also predicted that the Project mother experimental group would score significantly lower on

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[1] The Project centers are spread over a ten county area of some 2,000 square miles located in eastern Kentucky, which is more than 100 miles from the Research Division office in Frankfort.

[2] I.Q. data for the entire pretest sample were presented in the second interim report (January-February, 1970) submitted under Contract 70-43 to the Appalachian Regional Commission.

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post-test (Verbal and Full Scales) than the middle class and Project Teacher groups. No specific predictions regarding I.Q. change were made for the Project Teachers.

Pre- and post-test performance on the WAIS Verbal, Performance and Full Scales is presented in Table 20 for all three groups involved in the analyses specified by the first prediction. In addition, the mean chronological age (at pretest only) for each group is found in Table 21.

To assess the first prediction of overall group differences on each of the three WAIS scales on pre- and post-test, a series of analyses of covariance (general linear hypothesis model) were performed.[1] The independent variable was group (three levels: Middle Class, Project Teacher, Project Mother), with age at pretest employed as the single covariate because of the significant differences in age occurring between some groups (see Table 21). These overall analyses revealed that the main effect of group was significant (see Table 22).

In order to determine which predicted group differences were significant, a series of two sample t-tests were then performed. The Middle Class group (N=21) differed significantly from the Project Teacher (N=19) and Project Mother (N=28) groups on all three WAIS scales according to the results for pretesting. The same overall superiority of the Middle Class group was demonstrated when their pretest WAIS scores were compared to the post-test WAIS scores earned by Project Teacher and Project Mother groups. The Project Teacher group also scored significantly higher on all WAIS scales than the Project Mother group on pre- and post-tests. Table 23 summarizes these t-tests.

The t-test results confirm the prediction that significant differences on the WAIS between Middle Class, Project Teacher and Project Mother groups would occur in that order on both pre- and post-tests.

The second prediction that the Project mother experimental group would gain significantly in their WAIS performance was assessed by a series of t-test analyses. First, the Project mother experimental and control groups were compared (two sample t-tests) on the basis of their pre- and post-test WAIS scores. In no case did the two groups differ significantly from each other, although group means suggest that the experimental group tended to score higher on all scales (see Table 24). Further t-tests indicated there was no significant difference between the experimental and control groups in terms of I.Q. change between pre-and post-test on any of the WAIS scales (see Table 24). Thus, it was concluded that the experimental and control groups did not differ in I.Q. raw scores or I.Q. change.

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[1] At the University of Kentucky Computing Center.

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TABLE 20: HYPOTHESES 4a-4b: WAIS I.Q. SCORES OBTAINED BY MIDDLE CLASS MOTHERS (PRETEST ONLY) AND PROJECT TEACHERS AND MOTHERS (PRE- AND POST-TEST)

		Pretest		Post-Test		Change	
	N	Mean	SD	Mean	SD	Mean	SD
WAIS VERBAL SCALE I.Q.							
Project Mothers	28	86.43	10.76	86.82	11.60	.39	4.28
Project Teachers	19	99.32	10.18	102.43	12.28	3.11	6.63
Middle Class Mothers	21	112.90	10.42	not tested		--------	
WAIS PERFORMANCE SCALE I.Q.							
Project Mothers	28	85.36	10.51	91.11	11.83	5.75	5.74
Project Teachers	19	97.16	11.93	105.21	11.83	8.05	5.86
Middle Class Mothers	21	112.33	12.27	not tested		--------	
WAIS FULL SCALE I.Q.							
Project Mothers	28	85.18	10.16	87.93	11.53	2.75	4.20
Project Teachers	19	98.42	9.91	103.84	11.41	5.42	5.08
Middle Class Mothers	21	113.43	10.19	not tested		--------	

TABLE 21: HYPOTHESES 4a-4b: CHRONOLOGICAL AGE AT PRETEST. MIDDLE CLASS MOTHERS, PROJECT TEACHERS AND MOTHERS

	Project Teacher	Middle Class Mother	Project Mother[1]
N	19	21	28
Mean CA (in years)	40.05	30.76*	29.93**
SD	10.11	4.78	6.39

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[1] Project mother experimental and control groups did not differ significantly in pretest CA.

*PT > MC, t = 3.68, df = 38, ρ<<.01.

**PT > MC, t = 4.11, df = 45, ρ<<.01.

TABLE 22: HYPOTHESES 4a-4b: SUMMARY OF ANALYSIS OF COVARIANCE INCORPORATING GROUP (MIDDLE CLASS, PROJECT TEACHER, PROJECT MOTHER). WAIS PRE- AND POST-TEST VERBAL, PERFORMANCE AND FULL SCALE I.Q. SCORES[1]

	Source	DF	F	ρ
I. Pretest WAIS Verbal Scale I.Q. Scores	Group	1,65	75.91	<<.01
II. Pretest WAIS Performance Scale I.Q. Scores	Group	1,65	65.02	<<.01
III. Pretest WAIS Full Scale I.Q. Scores	Group	1,65	92.78	<<.01
IV.[2] Post-test WAIS Verbal Scale I.Q. Scores	Group	1,65	62.67	<<.01
V. Post-test WAIS Performance Scale I.Q. Scores	Group	1,65	38.12	<<.01
VI. Post-test WAIS Full Scale I.Q. Scores	Group	1,65	63.62	<<.01

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[1] Cell means for the dependent variables are found in Table 20. Covariate cell means are found in Table 21.

[2] All post-test analyses incorporate pretest scores for Middle Class criterion group which was tested only once.

TABLE 23: HYPOTHESES 4a-4b: SUMMARY OF TWO-SAMPLE T-TESTS COMPARING WAIS I.Q. SCORES, PRE- AND POST-TEST, OBTAINED BY MIDDLE CLASS MOTHERS, PROJECT TEACHERS AND MOTHERS

PRETEST

WAIS Verbal Scale I.Q.

$MC > PT$, $t = 4.06$, $df = 38$, $\rho << .01$

$MC > PM$, $t = 8.46$, $df = 47$ $\rho << .01$

$PT > PM$, $t = 4.03$, $df = 45$, $\rho << .01$

WAIS Performance Scale I.Q.

$MC > PT$, $t = 3.85$, $df = 38$, $\rho << .01$

$MC > PM$, $t = 8.10$, $df = 47$, $\rho << .01$

$PT > PM$, $t = 3.50$, $df = 45$ $\rho << .01$

WAIS Full Scale I.Q.

$MC > PT$, $t = 4.59$, $df = 38$, $\rho << .01$

$MC > PM$, $t = 9.42$, $df = 47$, $\rho << .01$

$PT > PM$, $t = 4.33$, $df = 45$, $\rho << .01$

POST-TEST*

WAIS Verbal Scale I.Q.

$MC > PT$, $t = 2.85$, $df = 38$, $\rho << .01$

$MC > PM$, $t = 7.97$, $df = 47$, $\rho << .01$

$PT > PM$, $t = 4.32$, $df = 45$, $\rho << .01$

WAIS Performance Scale I.Q.

$MC > PT$, $t = 1.82$, $df = 38$, $\rho < .05$

$MC > PM$, $t = 5.99$, $df = 47$, $\rho << .01$

$PT > PM$, $t = 2.87$, $df = 45$, $\rho < .01$

WAIS Full Scale I.Q.

$MC > PT$, $t = 2.74$, $df = 38$, $\rho << .01$

$MC > PM$, $t = 7.88$, $df = 47$, $\rho << .01$

$PT > PM$, $t = 4.56$, $df = 45$, $\rho << .01$

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*Middle Class pretest scores used as the criterion for these comparisons.

TABLE 24: HYPOTHESES 4a-4b: WAIS I.Q. SCORES (PRE- AND POST-TEST) OBTAINED BY THE PROJECT MOTHER EXPERIMENTAL AND CONTROL GROUPS

		Pre-Test		Post-Test		Change	
	N	Mean	SD	Mean	SD	Mean	SD
WAIS VERBAL SCALE I.Q.							
Experimental	17	87.82	10.74	88.12	11.39	.29	1.05
Control	11	84.27	10.94	84.82	12.18	.54	1.33
WAIS PERFORMANCE SCALE I.Q.							
Experimental	17	88.06	11.46	94.41	9.88	6.35	1.26
Control	11	81.19	7.49	86.00	13.21	4.27	1.98
WAIS FULL SCALE I.Q.							
Experimental	17	87.24	10.57	90.24	10.66	3.00	.80
Control	11	82.00	9.02	84.36	12.42	2.36	1.65

Assessment of I.Q. change within the experimental and control groups (one sample t-tests) indicated that both groups gained significantly from pre- to post-test on the WAIS Performance Scale (PME, $t = 5.05$, $df = 16$, $\rho < .01$; PMC, $t = 2.16$, $df = 10$, $\rho < .05$) but only the experimental group gained significantly on the Full Scale ($t = 3.75$, $\rho < .01$). Neither group showed a significant gain from pre- to post-test on the Verbal Scale. Therefore, these data do not confirm the expectation that experimental group Project mothers would clearly show greater gains than the control group on the WAIS as a function of their training experiences in the Mother Training Project.

Project Teachers, on the other hand, showed significant within-group gains on the WAIS Performance Scale ($t = 5.99$, $df = 18$, $\rho < .01$), Verbal Scale ($t = 2.04$, $df = 18$, $\rho < .05$) and the Full Scale ($t = 4.55$, $df = 18$, $\rho < .01$). In addition, a series of one-way analyses of covariance comparing the I.Q. change scores of Project Teachers and Project mothers (using age at testing and pretest I.Q. scores as the covariates) indicated that in every instance, Project Teachers gained significantly more than Project mothers. Table 25 summarizes the results of these analyses.

The prediction that Project experimental group mothers would score lower than the Project Teacher and Middle Class groups[1] on the WAIS at post-test was generally confirmed for all scales. Preceeding analyses which established that the Project mother experimental and control groups did not differ from each other on pre- and post-tests and the overall superiority of the Middle Class and Project Teacher groups to the total Project Mother group on pre- and post-tests make this conclusion apparent (see Table 20).

Because of the age discrepancies between the Project Teacher, Project Mother and Middle Class groups, it was important to determine if age at testing affected performance on any of the WAIS scales. Two-way analyses of covariance were run (general linear hypothesis model[2]) incorporating two independent variables: Group (Project Teacher, Project Mother or Middle Class) X Age (Older versus Younger).[3] The covariate for all analyses was chronological age (in years). Dependent variables for these analyses included pretest, post-test and change scores[4] for each of the WAIS scales.

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[1] Middle Class pretest scores were used as the criterion on pre- and post-test.

[2] At the University of Kentucky Computing Center.

[3] Subjects were assigned to age groups according to whether they fell at or below the median pretest age (31 years) or above the median pretest age.

[4] In these analyses, group comparisons included Project Mothers and Project Teachers only.

TABLE 25: HYPOTHESES 4a-4b: SUMMARY OF ANALYSIS OF COVARIANCE INCORPORATING GROUP (PROJECT TEACHER, PROJECT MOTHER). CHANGE (POST-TEST MINUS PRETEST) ON WAIS VERBAL, PERFORMANCE AND FULL SCALE I.Q. SCORES[1]

I. WAIS VERBAL SCALE I.Q. CHANGE

Source	df	F	ρ
Group	1,42	4.00	.05

II. WAIS PERFORMANCE SCALE I.Q. CHANGE

Source	df	F	ρ
Group	1,42	7.07	.05

III. WAIS FULL SCALE I.Q. CHANGE

Source	df	F	ρ
Group	1,42	5.37	.05

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[1] Cell means for the dependent variables are found in Table 20. Covariate means are found in Table 21.

The significant effects associated with group which have already been reported were replicated in these analyses. Age emerged as significant factor for pretest Performance Scale scores. The interaction between group and age was significant at the .05 level. The main effect of age was significant when change on Performance Scale I.Q. scores was compared for the Project Teacher and Project Mother groups ($\rho < .05$). The variables associated with these effects and the results of the analyses are presented in Tables 26-28.

TABLE 26: HYPOTHESES 4a-4b: PRETEST WAIS PERFORMANCE SCALE I.Q. AS A FUNCTION OF AGE AND GROUP. MIDDLE CLASS MOTHERS, PROJECT TEACHERS AND MOTHERS

MIDDLE CLASS MOTHERS

	Older	Younger
N	8	13
Mean	116.63	109.69
SD	13.03	11.48
CA[1]	35.63	27.77

PROJECT TEACHERS

	Older	Younger
N	14	5
Mean	101.00	86.40
SD	11.54	3.36
CA[1]	44.79	26.80

PROJECT MOTHERS

	Older	Younger
N	12	16
Mean	82.00	87.88
SD	12.98	7.71
CA[1]	36.67	24.88

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[1] CA at pretest was the single covariate. See Table 28 for analysis results.

TABLE 27: HYPOTHESES 4a-4b: CHANGE IN WAIS PERFORMANCE SCALE I.Q. SCORES AS A FUNCTION OF AGE. PROJECT TEACHER AND MOTHER SAMPLES COMBINED

	PROJECT TEACHERS	
	Older	Younger
N	14	5
Mean	6.14	13.40
SD	4.87	5.41
COVARIATES:[1]		
CA (post-test)	45.21	27.00

	PROJECT MOTHERS	
	Older	Younger
N	12	16
Mean	5.33	5.69
SD	6.81	5.03
COVARIATES:[1]		
CA (post-test)	37.08	25.56

[1] CA at pretest and pretest WAIS Performance Scale I.Q., used as covariates, are given in Table 26.

TABLE 28: HYPOTHESES 4a-4b: SUMMARY OF ANALYSES OF COVARIANCE INCORPORATING AGE X GROUP. WAIS PRETEST PERFORMANCE SCALE I.Q. SCORES AND CHANGE IN WAIS PERFORMANCE SCALE I.Q.

I. WAIS PRETEST PERFORMANCE SCALE I.Q.

Source[1]	df	F	p
Age (A)	1,61	.15	ns
Group (G)	2,61	38.83	<<.01
A X G	2,61	4.27	.05

[1] Adjusted for chronological age at pretest.

II. WAIS PERFORMANCE SCALE I.Q. CHANGE (ANALYSIS INCLUDES PROJECT TEACHERS AND MOTHERS ONLY)

Source[1]	df	F	p
Age (A)	1,40	7.21	.05
Group	1,40	.06	ns
A X G	1,40	1.47	ns

[1] Adjusted for chronological age at pre- and post-test and pretest WAIS Performance Scale I.Q.

In terms of pretest Performance Scale I.Q. scores, these data suggest that younger women in the Project Mother and Middle Class groups scored higher, whereas the older Project Teachers did comparatively better on this scale than younger Teachers. No within-group differences were significant, however, perhaps due to the discrepancies in subgroup N's and variances.

In the case of Performance Scale I.Q. change, the cell means clearly indicate that younger women made greater gains from pre- to post-test, especially in the Project Teacher group.

A final set of analyses were performed to determine if the WAIS I.Q. scores of Project mothers varied as a function of their welfare status. The Project Mother group was divided into those receiving AFDC (N=9), Partial Welfare Assistance (N=8) and No Assistance (N=11). Simple analyses of covariance incorporating Welfare Group as the independent variable were performed utilizing pre-, post-test, and change scores. No effects reached significance.

In summary, the first and third predictions dealing with expected group differences in WAIS I.Q. were supported for pre- and post-tests. The second prediction, that the Project Mother experimental group would show greater I.Q. gains than control Project mothers was not confirmed. However, Project Teachers as well as Project mothers did show significant gains on the WAIS over time, with Teacher gains being relatively greater. Finally, it was demonstrated that WAIS Performance Scale I.Q. is significantly affected by age in this sample. However, this effect varies according to group status since older Project Teachers and younger Project and Middle Class mothers initially tended to earn the highest Performance Scale I.Q. scores. Welfare status within the present Project Mother sample was not significantly related to intellectual functioning.

Hypotheses 5a-5b: Attitudes Toward Teaching Young Children

These hypotheses were assessed by the "Attitudes Interview" (Appendix D). Specifically, it was predicted that Project mothers, prior to the Mother Training Project, would give more status-oriented[1] answers to the interview than middle class mothers and Project Teachers. Following exposure to the Mother Training Project training experiences, it was expected that the Project Mother experimental group would modify their responses to these same items significantly more than the control group. That is, they would give more person- and instructive-oriented[1] answers. It was also predicted that Project experimental group mothers would increase their educational aspirations (for themselves and their target child in this study) significantly as a result of the Mother Training Project, whereas they were expected to indicate initial aspirations significantly lower than those of the middle class mothers and Project Teachers interviewed on pretest.

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[1] These terms refer to maternal control strategies described by Hess et al (1968). That is, a mother may seek to control her child by using an Imperative or Instructive "Mode" (asking compliance with no explanation versus asking compliance while giving a reason) and by using a Status-Normative, Personal-Subjective or Cognitive Rational "Appeal" (i.e., asking compliance in terms of authority or role considerations; reasons based upon personal feelings; or arguments based upon logic and the ability to anticipate consequences). Strategies usually can be categorized according to Mode, whereas the Appeal may not always be apparent. The kinds of Appeal also vary in terms of the type of participation allowed the child (passive to active). It has been assumed in this study that the use of effective teaching skills (see Hypothesis 6) is associated with the use of control strategies which reflect instructive rather than imperative Modes and Appeals which are focussed upon personal (or cognitive) considerations rather than stereotyped or authoritarian expectations. Because Cognitive-Rational Appeals do not occur often (Hess et al, 1968), no specific predictions were made about their occurrence in this study.

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In addition to the above predictions, it was of interest to analyze on a descriptive basis the responses of the various adult groups to the Attitudes Interview.

The procedures for analyzing the data descriptively were straightforward. Empirical categories were devised by the Research Division staff for each item on the basis of the data obtained from the entire sample of adults interviewed. Then the data for each item were coded and checked. In those cases where there was a coding disagreement the checker and original coder discussed the disagreement in order to resolve it. Unresolved disagreements were decided by the Research Director, if necessary.

Items 5 and 12-20 were taken from or based upon previous work done by Hess et al (1968). Since the interviews were taped, responses to these items were transcribed to enable detailed analysis of the Modes and Appeals employed by respondents as control strategies with their young children. Two Modes and three sources of Appeal as defined by Hess et al (1968) were utilized, i.e., the Instructive and Imperative Modes; Status-Normative, Personal-Subjective, and Cognitive-Rational Appeals. Appendix I contains definitions and examples for each Mode and Appeal. Any attempt to classify control strategies in terms of the proportion of statements or utterances in a response was abandoned. Instead, the entire response was classified according to the dominant Mode and Appeal expressed. Those instances in which more than one type of strategy was employed were classified as "mixed". All data dealing with control strategy categories were analyzed by the same research assistant.

Descriptive Summary of Findings. A detailed presentation of responses to each of the Attitudes Interview items (pretest administration) is found in Appendix J. Items 1 and 2 asked a mother (Teacher) to recall both specifically and generally what she taught her preschool child[1] and her teaching techniques. In all groups, the most frequently taught tasks concerned personal habit training (e.g., tying shoes) and the techniques mentioned most were demonstrating how to do the task and verbal instructing. In more general terms, mothers and Teachers alike most often said it was important to show "concern" for the child and to use praise. A number of Project Teachers thought that getting the child's attention and interest were important prerequisites for teaching. Several middle class mothers mentioned presenting material on the child's level.

When asked what things their children did in the center or preschool setting that "pleased them", most mothers and Teachers indicated they liked their children to have acceptable social behavior towards peers, to have good personal hygiene and to speak clearly. Project Teachers said showing independence and acceptable social behavior toward adults pleased them, whereas proportionately more middle class mothers said they valued academic skills.

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[1] "Child" in the case of Project Teachers refers to her youngest child when he or she was of preschool age.

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Except for immature behavior, most mothers said there was nothing about their child that displeased them. Teachers were somewhat more critical - undesirable behavior toward peers and immature behavior annoyed them.

About one-fourth of all respondents indicated that they did "nothing" to prepare their children for preschool, even though most of them thought parents should prepare their children for preschool experiences by telling them that they will have fun. Teachers suggested telling the child about making new friends and learning to be independent (middle class mothers also mentioned this). In all groups there was some concern that children be oriented toward minding the preschool teacher. In terms of what these parents actually told their children, most said preschool would be fun.

Specific probes asking what children should be told about preschool teachers and other children attending preschool classes revealed some interesting group differences. While Project mothers represented teachers as authority figures, Project Teachers and middle class mothers said they would describe the teacher as a "friend." Project mothers tended to stress socially acceptable behavior toward other children in the preschool, whereas Project Teachers and middle class mothers stressed that aspect along with making new friends.

Looking toward public school, most Project mothers felt their children would need little preparation for first grade because of its continuity with preschool. Some mothers and Teachers did say they would prepare their children by telling them they were going to learn how to read. In addition to this type of preparation, a number of Project Teachers and middle class mothers thought the child should be given a description of the school or taken there for a visit prior to enrolling.

Proportionately more Project mothers than middle class mothers said they had spent time in their children's preschool classroom. When asked about teaching techniques used by preschool teachers, most mothers listed verbal explanations, demonstrations, and special materials. One third of the Project mothers said they couldn't answer the question. Only Project Teachers and middle class mothers mentioned the importance of teaching in terms of goals. When asked in more general terms what they liked most about the way preschool teachers "handle" children, respondents mentioned "fair treatment" (aside from specific examples), most frequently. The overwhelming majority of mothers would not or could not name any general aspects which they disliked. A number of Teachers did say that they disliked center routines because there was too much free time or they had to work with groups of children which were too large.

Most Project mothers reported they didn't know how teachers in public school taught. Project Teachers and middle class mothers said that public school teachers use "special methods" and "aides", without specifying what they are.[1]

Answers given to items 12-20 varied in terms of the degree to which mothers (and Teachers) reported they would take responsibility for resolving the problem, refer the problem to the school, or leave it in the hands of their children. Parents in all groups were more likely to say they would solve the problem themselves when the child failed to do or to understand school assignments, missed school, refused to go to preschool for no acceptable reason (such as illness) or wanted to play with school books belonging to an older sibling. In such cases the mother said she would try to help the child understand his lessons, set up schedules and incentives, and in the latter two cases, make the child go to school and take the forbidden books away. Differences between middle class mothers, Project Teachers and Project mothers in these areas were in terms of their willingness to be concerned about the child's motivation (in those instances where the child was at fault to some degree) while resolving the situation. Project Teachers and middle class mothers were more willing to look for reasons behing their children's behavior and to make substitutions for the forbidden books than were Project mothers.

Mothers expressed solutions involving interaction with school teachers, principals and other parents in situations where their children were misbehaving, were the objects of another child's misbehavior, or were wrongly punished by their teachers. In most instances where their children were depicted as being at fault, the majority favored using verbal explanations. However, if their children had injured other children, the majority of mothers favored using physical punishment and/or sanctions.

Findings Related to Predictions. With the foregoing descriptive summary of general findings on the Attitudes Interview as background, the analyses of maternal control strategies and educational aspirations can be more meaningfully evaluated. Maternal control strategies (see Appendix I) were coded for items 5 and 12-20 while analyses of educational aspirations were based upon responses to items 21-22 of the Attitudes Interview (see Appendix J).

All analyses were performed according to procedures specified by Siegel (1956) for the Chi Square Test (two independent samples) or Fisher's Exact Test of Probability when expected cell frequencies fell below the recommended levels.

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[1] Post-test responses to these items are not reported since respondents were highly consistent on both interviews. No analysis of pre- to post-test change for these descriptive data were undertaken in the present study.

It was excepted that Project mothers would respond at pretest to item 5 and items 12-20 with significantly more Imperative Modes and Status-Normative Appeals than Project Teachers and middle class mothers. However, it was not expected that Project mother experimental and control groups would differ initially in terms of the control strategies elicited by these items. Following the Mother Training Project, it was predicted that the Project mother experimental group would report using significantly more Instructive and Personal-Subjective Modes and Appeals than the control group. The same directional predictions were made for pre- and post-test responses to those items on the Attitudes Interview (21-22) which assess the mother's educational aspirations for herself and her preschool child.

Inspection of the control strategy Modes and Appeals used by all respondents independent of group on item 5 and items 12-20 (see Appendix K for a detailed presentation of these data) indicates that a majority did not give responses oriented toward controlling their children's behavior in these hypothetical situations. In many cases this was due to the tendency for respondents to view these "problems" as being their responsibility or that of the school teacher rather than the child's. In other instances, despite the verbatim transcript, the responses were too vague to categorize. Items 5, 13, 15, 17 and 18 were eliminated from any statistical comparisons because of insufficient data.

In general, more respondents reported strategies which could be categorized according to Mode if not strictly according to Appeal. Where a "mixed" use of Appeals occurred, the response was classified according to Mode for purposes of analysis if the two Appeals occurred within the same Mode (e.g., the use of Status-Normative Instructive and Personal-Subjective strategies with the child). It should also be noted that virtually no respondents used Cognitive-Rational Appeals on any item (items 19-20 had been especially designed to elicit such an Appeal).

On the basis of comparisons run between groups on items 12, 14, 16, 19 and 20, no differences were found between the Project Mother experimental and control groups in terms of their reported use of control strategies at the time of pretest (prior to the inception of Mother Training Project experiences for the experimental group). There were significant differences, as predicted, between the middle class group and Project Teachers and mothers on items 12 and 14, which deal with classroom misbehavior and injurious aggression on the part of the child. On both items middle class mothers reported greater use of the Instructive Mode than Project Teachers and mothers ($\rho = .05$). On item 14, middle class mothers differed significantly in their use of an instructive strategy from Project Teachers only ($\rho = .05$). Middle class mothers used Personal-Subjective Appeals significantly more than Project Teachers and mothers on item 12 only ($\rho = .05$). There were no significant differences between Project Teachers and mothers in the type of Mode and Appeal they indicated they would use with their children on either item.

Post-test data on the reported use of control strategies are not presented for two reasons. Inspection of these data indicated that in the sample as a whole, even fewer mothers and Teachers reported using child-oriented control strategies. Some respondents may have been "bored" with the repetition of these items and answered accordingly. Because of very reduced N's it was generally impossible to carry out analyses on the use of Modes and Appeals. Those few analyses which could be run produced no significant differences. It was completely impossible to analyze for change in use of Modes and Appeals due to the fewness of respondents who used them on both pre- and post-test.[1]

Analyses of educational aspirations for self and child yielded the following findings: First, at pretest there was no significant difference between the Project mother experimental and control groups on either variable. Nor did these groups differ from each other at the time of post-test. Project Teachers reported significantly higher pretest aspirations for themselves ($p = .02$) and their children ($p = .001$) than did Project Mothers when comparisons were restricted to aspirations regarding attending college and completing a college degree. These differences were no longer significant in either case at the time of post-test. Middle class mothers (interviewed only at pretest) reported higher educational aspirations for themselves only when compared to Project Teachers ($\chi^2 = 3.43$, df = 1, $p < .03$). When compared with Project mothers, the middle class group had higher aspirations for themselves and their children, when attending college versus completing a college degree was the basis of comparison ($\chi^2 = 13.85$, df = 1, $p < .001$; $p = .001$).

Along with the above results, it should be born in mind that only 14.8% of the Project mothers had completed high school, whereas 52.6% of the Project Teachers and all of the middle class mothers had attended some college at least (see Appendix J). The main educational difference between the Project Teacher and middle class mother groups was the extent to which the latter group had completed college and gone on to graduate level work.

Other differences in educational orientation emerged on item 23 of the Attitudes Interview which asks what is necessary for a child to attain his educational objectives. Project mothers mentioned "money" most frequently whereas more Project Teachers and middle class mothers mentioned attitudes and desires in addition to financial considerations. Designation of intellectual and academic ability as important in attaining educational goals was mentioned mainly by mothers in the middle class group. Correspondingly, while most Project Teachers and middle class mothers thought their children had a realistic chance of finishing college, the majority of Project mothers were confident that their children would only finish high school. Only one-fifth of this group thought their children might realistically aspire to attend college, despite the high proportion of this group who wanted their children to attend college.

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[1] Because of these problems, additional analyses based upon Project mother teaching effectiveness (Hypothesis 6) or welfare status were not attempted.

On the basis of these findings, Hypotheses 5a-5b have been only partially confirmed. The predictions that Project experimental group mothers would develop a personal-instructive orientation toward controlling their children's behavior and that they would significantly increase their educational aspirations for themselves and their preschool children as a result of experiencing the Mother Training Project were not supported. As predicted, middle class mothers living in eastern Kentucky were found to use more personal-instructive control strategies and to have higher educational aspirations than Project Teachers and mothers (in this case for self and child). Somewhat surprisingly, however, it was found that Project mothers and Teachers were highly similar in their reported tendency to use more Status-Normative Appeals and the Instructive Mode less than middle class mothers interviewed for this study. Descriptive data gleaned from other Attitudes Interview items, suggest, however, that Project Teachers share more attitudes about the education of preschool children with middle class mothers than with Project mothers.

Hypotheses 6a-6c: Use of Teaching Skills

One of the most important objectives of the Mother Training Project was to increase the use of effective verbal teaching skills by Project mothers and Teachers. Therefore, it was necessary to ascertain at the time of pretesting what types of verbal techniques they employed, both in comparison with each other and with the middle class criterion group. It was anticipated that the procedures initiated during the training phase of the Mother Training Project would bring about an increase in the use of effective verbal techniques among Project Teachers and mothers.

"Effective" teaching skills, as defined in the proposal for this evaluation (Archambo, 1969) and stressed in teacher training sessions (see Appendix H), consisted of positive reinforcement in response to correct responses by the child; giving correct and complete information regarding the overall task and the sorting principles ("verbal elaboration"); and the use of questions and skillful directions which structure the learning situation appropriately and involve the child actively in the learning process. Conversely, "ineffective" verbal techniques were defined as criticism or negative feedback which does not specify what the child should do; and any other technique which elicits behavior without comprehension ("non-informative").

Three predictions were made regarding use of verbal teaching skills at pretest. First, Project Mothers were expected to use negative feedback and non-informative techniques significantly more than middle class 114 mothers and Project Teachers. Use of effective teaching techniques was predicted to be highest among middle class mothers, next among Project Teachers, and lowest within the Project mother group. Finally, no differences in verbal skill between Project mother experimental and control groups were expected at pretest.

Changes predicted for post-test may be summarized as follows: The Project mother experimental group was expected to show a significant increase in the use of effective verbal skills. This increase was predicted to be greater than any shown by the control group. Project Teachers were also expected to show a significant improvement in the use of techniques which are instructive.

Assessment of these predicitions was based upon data obtained from the Block Sort Task administered as the second of three Teaching Tasks (Appendix G). Limitations of time prohibited basing these analyses on more than one Teaching Task. The Block Sort was selected because of its relative difficulty (which was assumed to elicit a greater variety of verbal techniques from participating mothers and Project Teachers) and because it was presented to the adult-child pair after they had become familiar with the overall procedures involved in the Teaching Task situation. Analyses reported for this study were based upon pretest, post-test, and change between pre- and post-tests.[1]

Three kinds of data were utilized for these comparisons (a) verbatim transcriptions of the adult-child verbal interaction; (b) recorded verbal observations used to clarify the interaction transcripts; and (c) a check list of nonverbal behaviors occurring at ten second intervals throughout the task. These latter data were gathered to determine if any between-groups differences in teaching behavior existed at the nonverbal level.

In two cases (one Project Mother experimental pair, one Project Teacher pair), verbal interaction data were not available because of mechanical failures during the Block Sort Task. Nonverbal data were available for all adults, however.

The definitions used in classifying verbal teaching skills into the fifteen categories employed in this study are presented in Appendix L. Each transcript was divided into statement units (defined as complete thoughts); then use of a given teaching skill category was tallied and expressed as some proportion of the total number of statements in the transcript. Only the adult's verbalizations were utilized for these analyses. Data were coded and checked by two Research Assistants, with disagreements resolved by the Research Director. Interrater reliabilities were not computed.

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[1] This meant that all pairs (except one Project Teacher-child pair) were assessed for change between alternate forms of the Block Sort Task (A to B or B to A). Data were obtained for the middle class sample on pretest only.

Table 29 presents the median proportions for each of the fifteen verbal teaching techniques according to comparison group for pre- and post-tests. Inspection of these data indicates that statements conveying specific information about the nature of the task (TI, TII) or misinformation (TMI) occurred infrequently in all groups on pre- and post-test. Stating the sorting principle in terms of one (SP_1) or two dimensions (SP_2) as compared to simply labeling the sorting dimensions (SP) occurred relatively infrequently among all groups for both sessions. Telling a child to perform a response and explaining how that response relates to the task (DI) also occurred rarely in comparison to the incidence of telling the child to do something without an explanation (D) or merely redirecting his attention to some aspect of the task (DA).

Conversely, the most frequently used teaching skills were labeling sorting dimensions (SP), simple questioning (Q), and positive, non-informative (elaborated) reinforcement or feedback (+0).

Two kinds of analyses were performed on these data. First, groups were compared in their use of Instructive and Non-Instructive statements.[1] Next, these same groups were compared in their use of the following teaching techniques (grouped): (a) Positive Feedback (+0, +I); (b) Negative Feedback (-0, -I); (c) Task Information (TI, TII); (d) Sorting Principle (SP, SP_1, SP_2); (e) Directing Behavior (DI, D, DA); and (f) Questions (Q, QI). These two sets of analyses permitted qualitative comparisons in terms of overall verbal elaboration (instructiveness) and type of specific verbal teaching technique.

Comparisons were done according to Siegel's (1956) procedures for the Median Test while change between sessions was assessed by the Sign Test.

No differences in use of verbal techniques were found between Project mother experimental and control groups on pretest. Contrary to prediction, however, experimental group mothers did not show significant gains on any measures between pre- and post-tests nor did they show greater gains than the control group. On post-test, however, control group mothers gave significantly less Task Information than experimental group mothers ($\rho = .03$). No other differences reached significance.

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[1] Instructives $=\Sigma$of +I, -I, TII, SP_1, SP_2, DI, QI proportions. Non-Instructives $=\Sigma$of +0, -0, TI, SP, D, DA, Q proportions.

TABLE 29: HYPOTHESES 6a-6c: USE OF VERBAL TEACHING SKILLS IN THE BLOCK SORT TASK BY MIDDLE CLASS MOTHERS ON PRETEST AND PROJECT TEACHERS AND MOTHERS ON PRE- AND POST-TEST. MEDIAN PROPORTIONS OF TOTAL VERBAL STATEMENTS

	PRETEST			POST-TEST	
SKILL[1]	MC (N=21)	PT (N=18)	PM (N=27)	PT (N=18)	PM (N=27)
+0	.19	.10	.07	.13	.05
+I	.03	.02	.01	.03	.00
-0	.00	.01	.03	.01	.02
-I	.02	.01	.02	.01	.02
TI	.00	.01	.00	.00	.00
TII	.00	.00	.00	.00	.00
TMI	.00	.00	.00	.00	.00
SP	.18	.27	.16	.23	.22
SP_1	.00	.01	.00	.01	.00
SP_2	.00	.00	.00	.01	.01
D	.09	.09	.13	.14	.11
DI	.00	.02	.00	.00	.00
DA	.06	.08	.06	.07	.04
Q	.23	.24	.23	.22	.21
QI	.04	.01	.05	.03	.08

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[1] See Appendix L for definitions of teaching skill symbols.

As predicted, middle class mothers used positive reinforcement (+0, +I) significantly more than Project Teachers ($\chi^2 = 9.60$, df = 1, $\rho < .001$) and Project mothers ($\chi^2 = 11.77$, df = 1, $\rho < .001$) on pretest. The same finding (middle class pretest data used as the criterion) was obtained when use of positive reinforcement on post-test was analyzed. Middle class mothers did not use other skills significantly more than Project Teachers or mothers. They were significantly lower than Project mothers in use of verbal directing (D, DI, DA) on pretest ($\chi^2 = 4.31$, df = 1, $\rho < .02$), however.

Project Teachers did not differ significantly from Project mothers in their pretest use of verbal teaching skills, contrary to expectation. Teachers did excel Project mothers on post-test in the use of positive reinforcement ($\chi^2 = 6.02$, df = 1, $\rho < .01$) while using significantly less negative reinforcement (-0, -I) ($\chi^2 = 3.65$, df = 1, $\rho < .03$). When pre- to post-test changes were compared, more Project mothers increased their use of negative reinforcement significantly more than did Project Teachers ($\chi^2 = 3.84$, df = 1, $\rho < .05$).

Despite the lack of differences between Project mother experimental and control groups in terms of pre- to post-test changes, Project mothers as a group increased their use of the sorting principle (SP, SP_1, SP_2) significantly over time ($\chi^2 = 3.00$, df = 1, $\rho < .05$). Project Teachers significantly increased their use of positive reinforcement ($\rho = .05$) but decreased their use of negative reinforcement ($\rho = .06$) and the amount of task information they gave to the child ($\rho = .03$).

Thus, although some findings support the prediction that middle class, Project Teacher and mother groups will use effective verbal teaching techniques in that order, the obtained differences suggest this is true mainly in their use of reinforcement and not in terms of instructive or elaboration techniques. The prediction that Project mothers trained in the use of teaching skills would significantly increase their use of effective verbal techniques was not supported. Clearly, some modification of verbal teaching techniques did, in fact, occur in both the Project Teacher and mother groups, perhaps as a function of their increased familiarization with the demands of the task. However these changes were not the same for both groups. Change for Project mothers was related to the teaching of the sorting principle, whereas Teachers became increasingly focussed upon positively reinforcing the child generally.

Additional Findings. As indicated earlier in this section, analyses were performed to determine if middle class, Project Teacher and Project mother groups differed in the amount and kind of nonverbal behaviors displayed in the Block Sort Teaching Task. Nonverbal behaviors specifically recorded during this portion of the Teaching Task situation included facial expressions, gestures and physical contact which indicated the adult's approval or disapproval of the child generally or of a specific task-related response made by the child. Simple attending (or non-attending) responses on the part of the adult, along with adult directing (pointing) or interference (blocking ongoing behavior or taking over and doing the task herself), and changes in physical proximity were also recorded.

Because of mechanical difficulties encountered in making these observations and the impossibility of placing extra observers in the setting to check inter-rater reliabilities for these nonverbal behavior categories, results based upon these data should be viewed as suggestive at best. For purposes of analysis, the total number of observations was determined for each adult and the number of observations within each of the various nonverbal categories was then expressed as a proportion of the total observations. Group comparisons were carried out for each nonverbal category with median proportion of total observations used as the dependent variable. The Median Test (Siegel, 1956) served as the statistical test for these analyses. Comparisons were made between Project mother (experimental, control and total group), Project Teacher and middle class groups for pre- and post-test sessions as well as for change between sessions.

The incidence of observed behaviors in the general approval, general disapproval, interference and blocking, inattention, and changes in physical proximity categories was so small for all groups that no analyses could be performed on them. Accordingly, all tests of significance carried out for nonverbal data were based upon task-related approval (T+), task-related disapproval (T-), directing (D) (pointing to direct attention or a response), and general attending (A) (while the child performs the task) categories. Median proportions for each of these categories are presented in Table 30 according to comparison group and testing session (pretest, post-test, and change).[1]

Although there were no significant differences between any groups on pretest, several differences reached significance at the time of post-test. Specifically, Project experimental group mothers did more attending than Project control group mothers ($\chi^2 = 5.17$, df = 1, $\rho < .05$). Project Teachers exceeded Project mothers as a group ($\chi^2 = 5.75$, df = 1, $\rho < .02$), and middle class mothers ($\chi^2 = 10.03$, df = 1, $\rho < .01$) in the amount of task-related approval they displayed (e.g., smiling). Both Project Teachers and mothers used more task-related disapproval (e.g., frowning) on post-test than was shown by middle class mothers on pretest ($\chi^2 = 9.19$, df = 1, $\rho < .01$; $\chi^2 = 5.98$, df = 1, $\rho < .01$, respectively). When compared to middle class mothers, Project mothers used more nonverbal demonstration (e.g., pointing) on post-test ($\chi^2 = 4.44$, df = 1, $\rho < .05$). There were no significant differences between Project Teachers and mothers in terms of change in non-verbal behavior frequencies between pre- and post-test sessions.

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[1] Middle class criterion group data were obtained at pretest only.

TABLE 30: HYPOTHESES 6a-6c: THE MOST FREQUENT NONVERBAL BEHAVIORS DISPLAYED IN THE BLOCK SORT TEACHING TASK BY MIDDLE CLASS MOTHERS ON PRETEST AND PROJECT TEACHERS AND MOTHERS ON PRE- AND POST-TESTS (MEDIAN PROPORTION OF TOTAL OBSERVATIONS)

	PRETEST			POST-TEST	
BEHAVIOR	MC (N=21)	PT (N=19)	PM (N=28)	PT (N=19)	PM (N=28)
T+	.00	.00	.00	.17	.06
T-	.00	.00	.00	.02	.00
D	.76	.61	.57	.56	.54
A	.20	.26	.30	.18	.23

A final comparison was made between the Project Teacher, Project mother and middle class groups on the basis of the time they took to teach the Block Sort Task.[1] Two simple one-way analyses of variance were performed incorporating group as the independent variable with pretest and post-test Block Sort time as the dependent variables. Group means and standard deviations are presented in Table 31. The main effect of group was significant ($\rho < .05$) for pretest and post-test sessions (see Table 32). Two sample t-test comparisons established that the Project Teacher group took significantly more time to teach the Block Sort Task than the middle class criterion group on pretest ($t = 3.42$, $df = 38$, $\rho < .01$) and post-test ($t = 3.34$, $df = 38$, $\rho < .01$). There were no differences for either session between middle class mothers and Project mothers, nor between Project Teachers and mothers. Pearson Product-Moment correlation coefficients were computed between Block Sort Task time and child's total Block Sort score (see Hypothesis 8 results) for each adult-child pair within each of the three comparison groups (see Table 33). While none of these coefficients reached significance, it is interesting to note that the relationship between these variables is consistently negative for all groups except the Project Teacher group at pretest.

Further consideration of the implications of these findings is undertaken after the presentation of results for Hypothesis 8, which deals with the performance of children in the Block Sort and other Teaching Tasks.

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[1] Unless the 15 minute maximum time limit was exceeded, the mother or Teacher decided when the child had learned the task well enough to perform it for the examiner.

TABLE 31: HYPOTHESES 6a-6c: BLOCK SORT TASK TIME (MINUTES). MIDDLE CLASS MOTHERS (PRETEST), PROJECT TEACHERS AND MOTHERS (PRE- AND POST-TEST)

	Pretest		Post-test	
	Mean	SD	Mean	SD
Middle Class (N=21)	3.75	1.73	not tested	
Project Teacher (N=19)	6.69	3.38	5.68	1.84
Project Mother (N=28)	5.37	3.64	4.50	2.30

TABLE 32: HYPOTHESES 6a-6c: SUMMARY OF ANALYSES OF VARIANCE INCORPORATING GROUP (PROJECT TEACHER, PROJECT MOTHER, MIDDLE CLASS MOTHER). BLOCK SORT TASK, PRE- AND POST-TEST TIME

	Source	SS	df	F	ρ
I. PRETEST	Group	87.03	2	4.54	.05
	Error	623.63	65		
	Total	710.66	67		
II. POST-TEST[1]	Group	37.71	2	4.64	.05
	Error	264.06	65		
	Total	301.77	65		

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[1] Pretest time of Middle Class group.

TABLE 33: HYPOTHESES 6a-6c: THE RELATIONSHIP BETWEEN BLOCK SORT TIME AND CHILD'S TOTAL BLOCK SORT SCORE FOR MIDDLE CLASS, PROJECT TEACHER AND MOTHER-CHILD PAIRS. PRE- AND POST-TEST SESSIONS

	Pretest	Post-Test
	r	r
Middle Class (N=21)	-.20	not tested
Project Teacher (N=19)	+.15	-.25
Project Mother (N=28)	-.30	-.22

Hypotheses 7a-7b: Intellectual Change in Child Participants

One assumption underlying the Mother Training Project was that it would not only improve the teaching abilities of Project mothers and Project Teachers, but that it would have beneficial effects upon the intellectual functioning of Project children, especially those whose mothers received training as Teacher Aide Volunteers (experimental group). This section reports findings regarding change in intellectual functioning (accessed by the Wechsler Preschool and Primary Scale of Intelligence) as a function of six months exposure to the Rural Child Care Project child development program and, for the experimental group children, exposure of their mothers to training in the use of teaching skills. Both Project Teacher group children and middle class children served as criterion groups for the assessment of these effects.

Specifically, it was predicted that on pretest, all Project children (i.e., those in the Project Teacher and mother groups) would score significantly lower on the WPPSI than the middle class sample. By the time of post-test, however, it was expected that children in the Project mother experimental group only would show significant positive gains on the WPPSI. Children in the Project Teacher and Project mother control group were not expected to show as much gain since their mothers were not to receive teacher training. It was also predicted that despite the gains made on the WPPSI, all Project children would still be significantly lower at post-test than the middle class group (pretest scores were used as the criterion for both pre- and post-tests), especially on the WPPSI Verbal and Full Scales.

Table 34 presents means and standard deviations for WPPSI Verbal Performance and Full Scale I.Q. scores (pretest, post-test and change) obtained by middle class (pretest only) and Project (Teacher and Mother groups) samples tested twice.[1] Table 36 presents chronological ages (in months) for each comparison group at pre- and post-test.

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[1] A similar presentation of pretest data for all Project and middle class children tested initially (N=77) was made in the second interim report (January-February, 1970) submitted under Contract 70-43 to the Appalachian Regional Commission. Sample attrition apparently did not result in significantly different pretest means for the various WPPSI scales or different results (based upon pretest scores) than those reported here.

TABLE 34: HYPOTHESES 7a-7b: WPPSI VERBAL, PERFORMANCE AND FULL SCALE I.Q. SCORES OBTAINED BY MIDDLE CLASS CHILDREN ON PRETEST AND PROJECT TEACHER AND MOTHER GROUP CHILDREN ON PRE- AND POST-TESTS

		Pretest		Post-Test		Change	
	N	Mean	SD	Mean	SD	Mean	SD
WPPSI VERBAL SCALE I.Q.							
Middle Class Children	21	111.62	10.20	not tested		-----------	
Project Teacher Children	19	86.37**	12.08	89.53	13.62	3.16	12.61
Project Mother Children*	28	87.32**	16.79	90.86	13.26	3.54	11.16
WPPSI PERFORMANCE SCALE I.Q.							
Middle Class Children	21	111.14	10.26	not tested		-----------	
Project Teacher Children	19	88.26**	11.48	92.00	10.08	3.74	8.54
Project Mother Children*	28	91.50**	15.09	92.89	14.02	1.39	9.13
WPPSI FULL SCALE I.Q.							
Middle Class Children	21	112.71	9.58	not tested		-----------	
Project Teacher Children	19	85.95**	11.24	89.79	10.98	3.84	10.48
Project Mother Children*	28	88.18**	16.44	90.93	14.08	2.75	9.03

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*PM experimental group = PM control group on pretest, post-test, and change.
**MC > PT, PM ($\rho<<.01$) on pretest and post-test.

TABLE 35: HYPOTHESES 7a-7b: CHRONOLOGICAL AGE AT PRE- AND POST-TESTS. MIDDLE CLASS, PROJECT TEACHER AND PROJECT MOTHER CHILDREN'S GROUPS ADMINISTERED THE WPPSI

		Pretest		Post-Test	
	N	Mean	SD	Mean	SD
Middle Class Children	21	66.67	3.95	not tested	
Project Teacher Children*	19	58.79**	6.55	64.47	6.61
Project Mother Children	28	61.93**	6.69	68.14	6.47

---

*PM experimental = PM control group children on pre- and post-tests.

**MC > PT, PM, $t = 4.53$, $df = 38$, $p<.01$; $t = 2.83$, $df = 49$, $p<.05$.

Various parametric tests were employed to evaluate the above predictions. Pre- and post-test I.Q. scores for each WPPSI scale were subjected to one-way analyses of covariance (general linear hypothesis model)[1] incorporating group (Middle Class, Project Teacher, Project Mother) as the independent variable and age at testing (or baseline CA where the dependent variable was I.Q. change) as the covariate(s). The results for these analyses for pre- and post-test I.Q. scores are summarized in Table 36. In all cases, the main effect of group was significant ($p<<.01$). Two sample t-test comparisons between all combinations of groups indicated that middle class children scored higher on all WPPSI scales than children in the Project Teacher and Project mother groups when both pre- and post-test performances were compared. However, there were no differences between Project Mother and Project Teacher children on any pre- or post-test variables. A summary of these t-test results is found in Table 37.

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[1] At the University of Kentucky Computing Center. Analysis of covariance was utilized to control for between-groups age differences (see Table 35).

TABLE 36: HYPOTHESES 7a-7b: SUMMARY OF ANALYSES OF COVARIANCE INCORPORATING GROUP (MIDDLE CLASS CHILDREN ON PRETEST; PROJECT TEACHER AND MOTHER GROUP CHILDREN ON PRE- AND POST-TEST). WPPSI, VERBAL, PERFORMANCE AND FULL SCALE I.Q. SCORES[1]

		Source	df	F	p
I.	Pretest WPPSI Verbal Scale I.Q.	Group	1,65	26.94	<<.01
II.	Pretest WPPSI Performance Scale I.Q.	Group	1,65	19.71	<<.01
III.	Pretest WPPSI Full Scale I.Q.	Group	1,65	28.05	<<.01
IV.	Post-Test WPPSI Verbal Scale I.Q.	Group	1,65	24.49	<<.01
V.	Post-Test WPPSI Performance Scale I.Q.	Group	1,65	21.71	<<.01
VI.	Post-Test WPPSI Full Scale I.Q.	Group	1,65	28.86	<<.01

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[1] Cell means and covariates (CA at pretest and/or post-test) are presented in Tables 34 and 35.

TABLE 37: HYPOTHESES 7a-7b: SUMMARY OF T-TEST COMPARISONS BETWEEN MIDDLE CLASS, PROJECT TEACHER AND PROJECT MOTHER GROUP CHILDREN. WPPSI VERBAL, PERFORMANCE AND FULL SCALE I.Q. SCORES. PRE- AND POST-TEST[1]

I. WPPSI VERBAL SCALE I.Q.: PRETEST

MC > PT, $t = 6.98$, $df = 38$, $p << .01$
MC > PM, $t = 5.74$, $df = 47$, $p << .01$

II. WPPSI PERFORMANCE SCALE I.Q.: PRETEST

MC > PT, $t = 6.49$, $df = 38$, $p << .01$
MC > PM, $t = 5.03$, $df = 47$, $p << .01$

III. WPPSI FULL SCALE I.Q.: PRETEST

MC > PT, $t = 7.92$, $df = 38$, $p << .01$
MC > PM, $t = 5.68$, $df = 47$, $p << .01$

IV. WPPSI VERBAL SCALE I.Q.: POST-TEST

MC > PT, $t = 5.69$, $df = 38$, $p << .01$
MC > PM, $t = 5.85$, $df = 47$, $p << .01$

V. WPPSI PERFORMANCE SCALE I.Q.: POST-TEST

MC > PT, $t = 5.79$, $df = 38$, $p << .01$
MC > PM, $t = 4.94$, $df = 47$, $p << .01$

VI. WPPSI FULL SCALE I.Q.: POST-TEST

MC > PT, $t = 6.87$, $df = 38$, $p << .01$
MC > PM, $t = 5.98$, $df = 38$, $p << .01$

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[1] Middle Class children's pretest scores used for both pre- and post-test comparisons.

No significant differences were found, based upon the analyses of covariance, between Project Teacher and Project mother children in terms of the amount of I.Q. change from pre- to post-test on any of the WPPSI scales. Nor was the amount of within-groups I.Q. change significant on any WPPSI scale for either of these Project children groups (one sample t-tests).

Two sample t-test comparisons were used to assess whether Project Mother experimental and control group children were equivalent with respect to intellectual functioning on pretest and whether they differed subsequently at post-test, following the Mother Training Project.[1] According to expectation, the two groups were equivalent at pretest. Contrary to prediction, however, there were no differences between these children in terms of their post-test WPPSI I.Q. scores or in the amount of I.Q. change manifested between tests. One sample t-tests did show that I.Q. change within the control group was significant on the Verbal Scale ($t = 2.03$, $df = 10$, $\rho < .05$) and Full Scale ($t = 2.85$, $df = 10$, $\rho < .03$), which is the exact opposite of the change predicted. Table 38 presents a summary of I.Q. change shown by the experimental and control group children on each WPPSI scale.

TABLE 38: HYPOTHESES 7a-7b: CHANGE IN WPPSI VERBAL, PERFORMANCE AND FULL SCALE I.Q. SCORES. PROJECT MOTHER EXPERIMENTAL AND CONTROL GROUP CHILDREN

		WPPSI I.Q. CHANGE					
		Verbal Scale ($V_2 - V_1$)		Performance Scale ($P_2 - P_1$)		Full Scale ($F_2 - F_1$)	
PROJECT MOTHER	N	Mean	SD	Mean	SD	Mean	SD
Experimental Group	17	1.53	11.24	1.00	10.43	1.35	10.58
Control Group	11	6.64*	10.82	2.00	7.07	4.91**	5.72

*$\rho < .05$
**$\rho < .03$

On the basis of these data, it may be concluded that predictions of differences between the Project and Middle Class groups of children were confirmed. However, the prediction that Project children whose mothers participated in the Mother Training Project would show greater relative increments in intellectual functioning than children whose families received the standard child development and social service programs offered by the Project was clearly disconfirmed. There was no evidence, except within the control group, that six months exposure to the Rural Child Care Project or to additional experiences, such as those provided within the Mother Training Project, significantly increases intellectual functioning as measured by the WPPSI.

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[1] There were no significant age differences between these two groups, whereas differences were significant between Middle Class and Project children groups (see Table 35).

Additional Findings. The effects of age, sex and family welfare status upon intellectual functioning were also investigated with the present sample. To evaluate whether older children performed comparatively better or worse on the WPPSI than younger children, a series of two-way analyses of covariance were run incorporating group (Middle Class, Project Teacher, Project Mother) and Age (Older versus Younger) as the independent variables.[1] Age at testing (or baseline CA if I.Q. change was the dependent variable) served as the covariate(s). All analyses based upon pre- or post-test WPPSI I.Q. scores replicated the significant effect of group which has been documented previously. In only one instance was the effect of age significant in addition to the effect of group. When pretest WPPSI Performance Scale I.Q. was the dependent variable, the main effects of group and age were both significant ($\rho < .01$, $< .05$) whereas the interaction between them was not. Table 39 presents means and standard deviations for the variables and covariates involved in this analysis and Table 40 summarized the analysis. These data indicate that middle class children specifically and younger children generally tended to score higher on the WPPSI Performance Scale. (A Pearson Product-Moment correlation coefficient computed between pretest CA and WPPSI Performance Scale I.Q. for the total sample tested initially (N=77) indicated that these variables are not significantly related (r = .09).[2]

Comparisons were also made between groups of Project and Middle Class children on the basis of sex of child according to the same design described above. On pretest there was a significant interaction between sex and group for all three WPPSI scales. Summaries of the variables associated with these effects and of the analyses are presented in Tables 41 and 42. From Table 41 it may be seen that middle class children generally scored higher on all scales, with girls scoring higher in the middle class and Project Teacher groups but not in the Project Mother group (see Table 43). Assuming the effects of age were controlled, it is not know whether these differences are due to a sampling artifact or other factors. This finding, which is peripheral to the major hypotheses in this study, was not investigated further due to time limitations.

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[1] Children were assigned to age groups according to whether they were at or below or above the grand median (63 months) for pretest age.

[2] Pretest age is confounded with group since Middle Class children were significantly older.

TABLE 39: HYPOTHESES 7a-7b: WPPSI PERFORMANCE SCALE I.Q. AS A FUNCTION OF GROUP AND AGE. PRETEST

	Older	Younger	Older	Younger	Older	Younger
N[1]	12	12	6	13	18	3
CA at Pretest (in months)	67.42	56.17	66.17	55.38	67.83	59.66
WPPSI Performance Scale I.Q. - Pretest						
Mean	86.42	95.75	83.17	90.62	109.44	121.33
SD	14.03	16.45	6.18	12.76	10.09	2.08

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[1] Four Project Mother group children were excluded from these analyses because their age group designations were not the same for pre- and post-test.

TABLE 40: HYPOTHESES 7a-7b: SUMMARY OF ANALYSIS OF COVARIANCE INCORPORATING GROUP AND AGE. WPPSI PERFORMANCE SCALE I.Q., PRETEST

Source[1]	df	F	p
Group (G)	1,57	3.63	.05
Age (A)	2,57	16.67	.01
G X A	2,57	.08	ns

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[1] Adjusted for chronological age at pretest (see Table 39).

TABLE 41: HYPOTHESES 7a-7b: PERFORMANCE ON THE WPPSI AS A FUNCTION OF GROUP AND SEX OF CHILD. PRETEST

	Project Mother Group		Project Teacher Group		Middle Class Group	
	Male	Female	Male	Female	Male	Female
N	10	18	10	9	10	11
CA at pretest (in months)	58.20	64.00	59.90	57.56	67.60	65.82
WPPSI Verbal Scale I.Q.: Pretest						
Mean	92.90	84.22	80.00	93.44	105.40	117.27
SD	21.04	13.59	12.56	6.62	9.91	6.77
WPPSI Performance Scale I.Q.: Pretest						
Mean	100.00	86.78	83.10	94.00	107.10	114.82
SD	13.81	13.95	10.08	10.57	10.31	9.14
WPPSI Full Scale I.Q.: Pretest						
Mean	95.90	83.89	79.40	93.22	107.00	117.91
SD	18.37	14.00	11.14	5.63	8.67	7.33

TABLE 42: HYPOTHESES 7a-7b: SUMMARY OF ANALYSES OF COVARIANCE INCORPORATING GROUP AND SEX OF CHILD. WPPSI VERBAL, PERFORMANCE AND FULL SCALE I.Q. SCORES. PRETEST

I. WPPSI Verbal Scale I.Q.: Pretest

Source[1]	df	F	p
Group (G)	2,61	20.62	<<.01
Sex (S)	1,61	3.12	ns
G x S	2,61	4.02	.05

II. WPPSI Performance Scale I.Q.: Pretest

Source[1]	df	F	p
Group (G)	2,61	17.54	<<.01
Sex (S)	1,61	.42	ns
G x S	2,61	5.52	.01

III. WPPSI Full Scale I.Q.: Pretest

Source[1]	df	F	p
Group (G)	2,61	24.82	<<.01
Sex (S)	1,61	2.12	ns
G x S	2,61	6.16	.01

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[1] Adjusted for the effects of chronological age. Covariate means are presented in Table 41.

TABLE 43: HYPOTHESES 7a-7b: SUMMARY OF T-TESTS. GROUP X SEX INTERACTICN. WPPSI VERBAL, PERFORMANCE AND FULL SCALE I.Q. SCORES. PRETEST

I. WPPSI Verbal Scale I.Q.: Pretest

PT: Females $>$ Males, $t = 2.72$, df = 17, $p < .01$
MC: Females $>$ Males, $t = 3.07$, df = 19, $p < .01$

II. WPPSI Performance Scale I.Q.: Pretest

PM: Males $>$ Females, $t = 2.32$, df = 26, $p < .03$
PT: Females $>$ Males, $t = 2.18$, df = 17, $p < .03$

III. WPPSI Full Scale I.Q.: Pretest

PM: Males $>$ Females, $t = 1.86$, df = 26, $p < .05$
PT: Females $>$ Males, $t = 3.18$, df = 17, $p \ll .01$
MC: Females $>$ Males, $t = 2.97$, df = 19, $p \ll .01$

A final series of one-way analyses of covariance were performed to assess the effects of family welfare status[1] upon WPPSI I.Q. scores on pretest, post-test and change in intellectual functioning within the Project mother sample (N=28). Age at testing (or baseline CA if the dependent variable was I.Q. change) served as the covariate(s). In no case did the main effect of group reach significance.

Thus it may be concluded that there are pervasive intellectual differences between Project and indigenous middle class children in eastern Kentucky and that the short-term effect of various Project programs upon intellectual functioning in the present sample of children is negligible. Children in all groups were found to vary significantly in intellectual functioning according to group status, age and sex.

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[1] AFDC Family (N=8), Partial Assistance Family (N=9), No Assistance Family (N=11).

Hypotheses 8a-8b: Teaching Task Performance of Child Participants

The assumption underlying these hypotheses was that if Project Mothers (experimental group) and Teachers increased their teaching effectiveness as a result of the Mother Training Project, these changes would be reflected in the performance of children (their own in the case of Project mothers) taught by them in the Teaching Task situation (see Appendix G). Specific between-groups differences were predicted for pretest Teaching Task scores. That is, middle class children were expected to earn higher verbal and performance scores[1] generally. Project children taught by Project Teachers were expected to score higher at pretest than Project children taught by their own mothers.

On post-test, following six months of teacher training, it was predicted that Project Mother experimental group children would show significantly greater improvement in their Teaching Task performance than control group children. However, it was expected that Project Teacher group children would still score higher than Project Mother group children. It was predicted that the post-test performance of all Project children, whether taught by their mothers or by Project Teachers, would still be significantly lower than the pretest performance of middle class children taught by their mothers. Between-groups differences in Teaching Task scores, whether predicted for pretest, post-test, or change between sessions, were expected to be most evident in terms of children's ability to verbalize sorting principles correctly (Toy and Block Sort Tasks only).

Eight measures were used to assess teaching task performance. Three measures were obtained for each of the first two tasks administered to each child (Toy Sort and Block Sort). A performance score (0-2 points) was based upon the child's ability to perform a sort correctly. A verbal score (0-4 points) reflected his ability to verbalize the sorting principles. The sum of performance and verbal score points determined the total score (0-6 points) for each of these two tasks. On the Block House Task, each child earned from 0-19 points based upon the number of blocks placed correctly. Finally, an overall total score was computed based upon the sum of points earned on all three tasks (0-31 points).

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[1] It should be noted that the dependent variables used in these analyses depart somewhat from those stipulated in the original proposal (Archambo, 1969). This is due to the fact that the exact nature of the task scores was not known at the time the proposal was written. In each case, dependent variables used conform closely to those employed by the Hess et al (1968) and Bee et al (1969) studies which were used as the basis of the pretest investigation.

All analyses of Teaching Task performance were accomplished using non-parametric tests. Pre- and post-test scores were evaluated using the Median Test, whereas within-group chances were analyzed by the Sign Test, according to Siegel's procedures (1956).

Prior to assessing the predictions specified in Hypotheses 8a-8b, comparisons were made to determine if Teaching Task performance was a function of the form (A or B) administered. Separate Median Tests were performed for each Teaching Task comparing children administered Form A with those administered Form B on pre- and post-test (see Table 44). Total score earned on a given task was the dependent variable for all analyses. In only one case was a significant result obtained. On the pretest Block Sort Teaching Task, children administered Form A (N=38) obtained significantly lower scores than children given Form B (N=30) ($\chi^2 = 6.67$, df = 1, $p<.01$). Thus, while Forms A and B of the Toy Sort and Block House Tasks were of equal difficulty for the present sample, Form B of the Block Sort was significantly easier than Form A on first administration of the Teaching Tasks.[1] The fact that more Project children tested twice received Form A on pretest and Form B on post-test (of all Teaching Tasks) may have produced a positive gain on the Block Sort Task which was related more to form than to qualitative changes in adult teaching ability or child learning proficiency.

Tables 45-48 present a summary of median verbal, performance and total scores for each of the comparison groups on pre- and post-tests according to task. Pretest data include the total Project sample tested initially (N=56) whereas post-test data are based only upon those Project children who were tested twice[2] (N=47).

Table 49 summarizes the results of the Median (or Fisher's Exact) Test comparisons which reached significance for pre- and post-test data. For the sake of clarity, discussion of these results is done according to testing session.

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[1] Form A of the Block Sort Task (see Appendix G) required sorting on the basis of symbol (X, O) and height (tall, short). Color (red, yellow, green, blue) and shape (round, rectangular) were irrelevant. Form B required sorting on the basis of shape (round, rectangular) and color (red, blue). Height (tall, short) and symbol (X, O, /, Δ) were irrelevant. Apparently some children were confused on Form A by the various colors and their inability to read (or get up high enough to see) the symbols on either end of the blocks.

[2] Because of the complexity and number of analyses involved in these comparisons, it was not possible to re-analyze pretest data for those children tested twice. The pretest results reported here were previously presented in the April, 1970, Quarterly Research Progress Report submitted to OEO under the provisions of OEO Contract 4205.

TABLE 44: HYPOTHESES 8a-8b: MIDDLE CLASS, PROJECT TEACHER AND MOTHER GROUP CHILDREN ADMINISTERED FORMS A AND B OF THE TEACHING TASKS, PRE- AND POST-TEST

	Pretest		Post-Test	
	Form A	Form B	Form A	Form B
Project Mother	17	11	11	17
Project Teacher	11	8	9	10
Middle Class	10	11	--not tested --	
Total	38	30	20	27

TABLE 45: HYPOTHESES 8a-8b: PERFORMANCE ON THE TOY SORT TEACHING TASK. MIDDLE CLASS CHILDREN ON PRETEST AND PROJECT TEACHER AND MOTHER GROUP CHILDREN ON PRE- AND POST-TEST. MEDIAN VERBAL AND PERFORMANCE SCORES.

		Pretest[1]				Post-Test[1]		
	N	Verbal (0-4)	Performance (0-2)	Total (0-6)	N	Verbal (0-4)	Performance (0-2)	Total (0-6)
Middle Class	21	4 (3-4)	2 (1-2)	6 (4-6)	-	---	not tested	---
Project Teacher	20	2 (0-4)	1 (0-2)	3 (0-6)	19	4 (0-4)	2 (0-2)	6 (0-6)
Project Mother	36	2 (0-4)	1 (0-2)	3 (0-6)	28	4 (2-4)	2 (1-2)	6 (3-6)

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[1] The pretest Project sample consists of all children tested; post-test scores are based upon children tested twice.

TABLE 46: HYPOTHESES 8a-8b: PERFORMANCE ON THE BLOCK SORT TEACHING TASK. MIDDLE CLASS CHILDREN ON PRETEST AND PROJECT TEACHER AND MOTHER GROUP CHILDREN ON PRE- AND POST-TEST. MEDIAN VERBAL AND PERFORMANCE SCORES

			Pretest[1]				Post-Test[1]	
	N	Verbal (0-4)	Performance (0-2)	Total (0-6)	N	Verbal (0-4)	Performance (0-2)	Total (0-6)
Middle Class	21	4 (1-4)	2 (1-2)	6 (3-6)	-	---	not tested	---
Project Teacher	20	1 (0-4)	2 (0-2)	3 (0-6)	19	2 (0-4)	2 (0-2)	4 (0-6)
Project Mother	36	2 (0-4)	2 (0-2)	4 (0-6)	28	4 (0-4)	2 (1-2)	6 (1-6)

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[1] The pretest Project sample consists of all children tested; post-test scores are based upon children tested twice.

TABLE 47: PERFORMANCE ON THE BLOCK HOUSE TEACHING TASK. MIDDLE CLASS CHILDREN ON PRETEST AND PROJECT TEACHER AND MOTHER GROUP CHILDREN ON PRE- AND POST-TEST. MEDIAN PERFORMANCE SCORE

	N	Pretest[1] Performance (0-19)	N	Post-Test[1] Performance (0-19)
Middle Class	21	19 (3-19)	not tested	--
Project Teacher	20	7.5 (0-19)	19	16 (0-19)
Project Mother	36	13 (0-19)	28	19 (0-19)

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[1] The pretest Project sample consists of all children tested; post-test scores are based upon children tested twice.

TABLE 48: HYPOTHESES 8a-8b: TOTAL PERFORMANCE ON THE TEACHING TASKS. MIDDLE CLASS CHILDREN ON PRETEST AND PROJECT TEACHER AND MOTHER GROUP CHILDREN ON PRE- AND POST-TEST. MEDIAN TOTAL SCORE

	N	Pretest[1] Total Score (0-31)	N	Post-Test[1] Total Score (0-31)
Middle Class	21	31 (15-31)	-	-not tested-
Project Teacher	20	13.5 (6-28)	19	23 (4-31)
Project Mother	36	20 (1-31)	28	29 (4-31)

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[1] The pretest Project sample consists of all children tested; post-test scores are based upon children tested twice.

TABLE 49: HYPOTHESES 8a-8b: SUMMARY OF SIGNIFICANT MEDIAN TESTS. PRE- AND POST-TEST TEACHING TASK SCORES OF MIDDLE CLASS, PROJECT TEACHER AND MOTHER GROUP CHILDREN.

Chi Square Values for Significant Comparisons (df=1)

PRETEST[1]	MC > PT (N=21) (N=20)	MC > PM (N=21) (N=36)	PM > PT (N=36) (N=21)
Toy Sort			
Verbal Score	16.09***	27.60***	
Performance Score	16.09***	19.84***	
Total Score	16.09***	25.45***	
Block Sort			
Verbal Score	15.29***	12.99***	2.99*
Performance Score	6.02*		
Total Score	15.29***	12.99***	2.99*
Block House			
Performance	20.57***	12.57***	
Total Score	26.63***	20.21***	

POST-TEST[2]	MC > PT (N=21) (N=19)	MC > PM (N=21) (N=28)	PM(PME) > PT (N=28,17) (N=19)
Toy Sort			
Verbal Score		3.09*	
Performance Score		2.27*	
Total Score		3.09*	
Block Sort			
Verbal Score	4.87*		
Performance Score	*		6.67**(**)
Total Score	4.87*		
Block House			
Performance Score	6.53**		
Total Score			

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* p < .05 (symbol alone indicates exact probability value)
** p < .01 (symbol alone indicates exact probability value)
*** p < .001

[1] Pretest comparisons included all Project children tested (N=56).
[2] Post-test comparisons include middle class pretest scores.

Pretest Findings: As predicted, middle class children scored significantly higher than Project children on virtually all the Teaching Task variables. It was also ascertained, as expected, that Project Mother experimental (N=20) and control group children (N=16)[1] did not differ in their pretest performance on these tasks. Contrary to prediction, Project children taught by their Project Teachers performed no better than children taught by their own mothers. In fact, Project Mother children scored significantly higher than Project Teacher children on the Block Sort Task.

Post-Test Findings: Comparison of raw scores earned on post-test (see Tables 45-48) indicated that as predicted, Project children still performed at a significantly lower level than middle class children at pretest on the Toy Sort, Block Sort and Block House Tasks. However, contrary to expectation, group differences on the Block Sort and Block House Tasks are significant only for Project children taught the tasks by their Project Teachers. Furthermore, Project children taught by their mothers (especially if the mother received training as a Teacher Aide Volunteer) earned higher performance scores on the Block Sort Task than children taught by a Project Teacher. However, the post-test Teaching Task scores of Project Mother experimental and control group children did not differ significantly.

It is rather surprising that there were virtually no significant differences between Project Mother group children at post-test and middle class children at pretest, other than on the Toy Sort Task. Considering the comparative difficulty of the Block Sort and Block House Tasks, it may be that the Toy Sort Task simply represented a more critical "warm-up" task for Project mother-child pairs than for the middle class sample.

It may be concluded on the basis of these findings that aside from confirming the superiority of middle class children on these tasks, the predictions regarding greater gains for Project experimental group children and Project Teacher children were not confirmed.

Pre- to Post-Test Change: Table 50 summarizes the results for within-group Sign-Test (Siegel, 1956) comparisons which were significant. These findings confirm the prediction that Project children would show significant gains in their Teaching Task performance on post-test. Correspondingly, Project experimental group children showed significant gains on more variables than did control group children.

Again contrary to prediction, children taught by Project Teachers showed no significant gains on the Block Sort Task. Otherwise, however, they showed significant improvement on other tasks in the same manner as Project children taught by their own mothers.

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[1] Groups as initially constituted at pretest.

TABLE 50: HYPOTHESES 8a-8b: SUMMARY OF SIGNIFICANT SIGN TESTS. CHANGE (PRE- TO POST-TEST) FOR PROJECT TEACHER AND MOTHER (EXPERIMENTAL AND CONTROL) GROUP CHILDREN

	Level of Significance (ρ)			
	PME (N)[1]	PMC (N)	PM (N)	PT (N)
TOY SORT				
Verbal Score	.003 (12)	.004 (8)	.001 (20)	.002 (13)
Performance Score	.02 (9)	.004 (8)	.001 (20)	
Total Score	.003 (12)	.004 (8)	.001 (20)	.006 (14)
BLOCK SORT				
Verbal Score	.01 (10)		.006 (17)	
Performance Score			.035 (8)	
Total Score	.01 (10)		.004 (18)	
BLOCK HOUSE				
Performance Score	.01 (10)		.001 (17)	.006 (17)
TOTAL SCORE	.004 (15)	.001 (10)	.001 (25)	.004 (18)

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[1] N = number of children showing gain or loss. Children showing no change were excluded from these analyses.

Analyses comparing Project Mother and Project Teacher children in terms of their pre- to post-test gains failed to reveal any significant differences. That is, most children in the Project sample tended to show positive gains, independent of who taught them (i.e., their mother or Project Teacher) or whether their mother had experienced the general volunteer program or specialized training as a Teacher Aide Volunteer. Therefore, the prediction that Project Mother experimental group children would show greater relative gains in Teaching Task performance than the control group following the Mother Training Project was not supported by these data.

Additional Findings: Median and Fisher Test comparisons were also performed on the basis of sex and age of child. For the entire pretest sample (N=77), it was found that females (N=40) earned significantly higher scores than males (N=37) on the Toy Sort verbal ($\chi^2 = 3.91$, df = 1, $\rho < .05$), performance ($\chi^2 = 5.81$, df = 1, $\rho < .02$) and total scores ($\chi^2 = 3.87$, df = 1, $\rho < .05$). No other sex differences for the total sample or within comparison groups were found. Between-groups, within-sex analyses did suggest that the earlier reported tendency for middle class children to perform better on all Teaching Tasks was especially evident for male children. No sex differences at pretest were associated with experimental or control group designations within the Project Mother group.

Comparisons based upon age were accomplished by dividing the entire sample into older and young groups with respect to age at pretest. Although it was found that older children (N=37) earned higher pretest scores than younger children (N=40) on the Toy Sort, Block House and Total Task ($\rho < .01$) the effect of age was confounded with the effect of group, since only three middle class children fell into the younger group at pretest. No within-group age comparisons were significant at pretest. No significant age effects were associated with pretest experimental and control Project Mother groups.

On post-test, there was no significant over-all difference in the performance of male and female children (pretest middle class and post-test Project children sample, N=68). Middle class females (N=11) did score significantly higher on the pretest Block House Task than Project Teacher females (N=9) did on post-test ($\rho < .05$). Within-group comparisons based upon post-test data indicated that in the Project Mother experimental group, females (N=9) scored higher than males (N=6) on all Toy Sort variables ($\rho < .05$). The superior performance of the Project Mother group on the Block Sort Task when compared to Project Teacher children was apparently due to a significant difference between females in these groups ($\rho = .02$). There were no significant between- or within-groups sex differences associated with change in Teaching Task performance.

At the time of post-test, older Project children (N=18) did perform significantly better than younger Project children (N=29) on the Toy Sort Task (performance score only, $\chi^2 = 4.54$, df = 1, $p < .05$) and the Block Sort Task (performance score only, $p < .05$). No other effects, including those associated with change in Teaching Task performance, were significantly related to age.

Hypothesis 9: Project Teacher and Mother Evaluations of the Mother Training Project

This last section of results for the Mother Training Project deals primarily at the descriptive level with the reactions of Project Teacher and Mother participants to the Project volunteer program and the Mother Training Project. Three sets of measures were specified for this hypothesis. First, Project Teachers were asked the same set of interview items on pre- and post-test to determine if their general attitudes about Project mother volunteers would change as a function of Mother Training Project participation. A second set of items was administered at post-test to assess specific aspects of their experiences with Project experimental and control group mothers in the Mother Training Project. Both sets of items are incorporated in the "CDC Teacher Interview: Attitudes Toward Project Volunteers" (Appendix E). A third set of interview data were gathered from Project mothers (experimental and control groups) to obtain their first-hand reactions to the Project volunteer program generally and the Mother Training Project specifically (see Appendix F, "Evaluation of Volunteer Experience").

Several predictions are contained in Hypothesis 9. It was expected that Project Teacher evaluations of the general volunteer program and the capacities of Project mother volunteers would be more favorable after the Mother Training Project was completed. Furthermore, it was predicted that Project mothers trained as Teacher Aide Volunteers during the Mother Training Project would want to continue as volunteers significantly more than control group mothers. Lastly, it was expected that those Project mothers who showed the greatest gains in the use of effective verbal teaching skills would be most favorable in their evaluation of their training experiences.

Before assessing each of these predictions within the limitations of the data collected for this hypothesis, a descriptive summary of responses to each of these short, oral interviews administered to Teachers and Project mothers is presented.

Descriptive Findings: Project Teachers. Appendix M contains a detailed breakdown of responses given by Project Teachers to each item of the "CDC Teacher Interview: Attitudes Toward Project Volunteers" on pretest. Most Teachers (68.4%)[1] reported that a volunteer program had been in effect in most centers for two to three years. Project mothers volunteer most frequently (84.2%), with community persons mentioned as the second most common source of volunteers (36.8%). Teachers listed helping with art activities and reading to children (80.2%) as well as helping in the kitchen (52.6%) as typical activities for "new" volunteers. However, some Teachers felt new volunteers were not qualified to lead musical activities (36.8%), to "teach" generally or to carry out art activities alone (21.1%). Teachers varied widely in reporting the kinds of assignments they gave to new volunteers. Some indicated they "let the mother do what she wants" (21.1%), while only 10.5% specifically mentioned making assignments on the basis of the mother's abilities (at least two Teachers admitted being unsure about how to use volunteers effectively). Virtually all Teachers were positive in their reactions to the volunteer program and to its being continued because of the benefits it provides for staff, parents and children. However, a number of them (43.4%) had reservations about problems created by volunteer mothers--namely bringing underage children into the centers, upsetting the enrolled child and interferring with center routines. Recommendations for improving the volunteer program included getting more parents to participate on the one hand (31.6%) and providing more training (21.1%), organization and effective scheduling for staff and volunteers (31.6%) on the other.

Predictions: Project Teachers. A detailed breakdown of post-test responses to the first portion (items 1-9) of the CDC Teacher Interview: Attitudes Toward Project Volunteers" is not presented because of the overall similarity of responses on pre- and post-test to these items. However, when these data were compared some changes had occurred. For example, on post-test, responses to items 5 and 6 (whether the Teacher was favorable, neutral or unfavorable toward the volunteer program and why) contained 100% positive reactions with less mention of reservations pertaining to problems created for the staff by volunteers. However, when asked what upset them most about working with Project mother volunteers, Teachers mentioned the problems of younger children, upset center routines and improper expectations about child behavior with the same frequency as on pretest.

Detailed results for items 10-25 of the "CDC Teacher Interview: Attitudes Toward Project Volunteers" (administered only on post-test) are presented in Appendix N. When asked how they felt initially about participating in the Mother Training Project, the majority (68.41%) said they had been favorably disposed, although 31.56% reported neutral or negative reactions because of uncertainties about their role or the mother trainee's role. At the end of the Project, virtually all of the Teachers (94.42%) reported positive reactions to their experience, with 63.2% saying that the greatest benefit was derived by the mother and 31.57% indicating that both staff and mother had profited. The Teachers said they enjoyed the mother's ability and willingness to learn (21.05%), pleasantness (15.78%), interest in her children and application of teaching skills with them (15.78%), their own increased confidence as teachers (10.52%) and the mother's increased teaching skill (10.52%). The most frequently-voiced negative aspects were the mother's failure to come often enough or on schedule (21.05%), her failure to select or prepare appropriate materials (10.52%) and her lack of self-confidence (10.52%). (Teachers did not, however, relate occurrence of such problems to the objectives of the Mother Training Project, which focussed upon helping mothers overcome just such problems.) More than a third of the Teachers reported they had no problems (36.84%).

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[1] Percents refer to the number of respondents giving the response.

Despite listing mother's lack of self-confidence as a problem as well as an area where the mother needed more training (31.57%), Teachers mentioned improved self-confidence (36.84%) and ability to use positive rewards (15.78%) most often when asked what positive changes they had observed in Project mother trainees. In three cases (15.78%) Teachers said they couldn't evaluate their Project mother because they had not worked with her long enough. Three Teachers reported their Project mother trainee was an "effective teacher" and didn't need further training.

Although Teachers were supposed to make home visits during the course of the Mother Training Project, 21.05% were unable to do this for various reasons. One third of the Teachers reported that the Project mother was using the teaching skills (see Hypothesis 6) at home, that the mother's patience and understanding of her children and family had improved (15.78%), and that her personal appearance was better since participating in the Mother Training Project (10.52%).

Teachers reported mixed effects of the Mother Training Project with respect to the center staff and ongoing program. On the negative side, they reported that problems and extra work had been created for them and their staff, especially since other staff had to care for small children and assume the Project Teacher's responsibilities when the Project mother came in for a training session (26.3%). Initially the Mother Training Project created a great deal of "role confusion" for Teachers, other staff and mothers (10.52%). However, on the positive side, several Teachers indicated that as a result of facing these problems, Project mothers were now better accepted as volunteers in the centers and could function more effectively as teaching assistants (42.09%).

When asked to indicate whether the Project experimental or control group Mother in their centers was better qualified for each of the center staff positions[1], Teachers did not differ in their choice of mothers within either group for non-teaching positions (i.e., cook, transportation aide) (see Table 51). However, Teachers chose the experimental group mother significantly more often than the control mother (or neither/both) when teaching positions were involved; i.e., teacher aide (χ^2 = 22.33, df = 2, $\rho<.005$), teacher (χ^2 = 10.90, df = 2, $\rho<.025$), or senior teacher (χ^2 = 7.09, df = 2, $\rho<.025$).[2] Therefore, in terms of the above descriptive data and these analyses based upon staff nominations, the prediction is supported that Project Teachers would be more favorable in their evaluation of the volunteer program and the capabilities of teacher-trained volunteers following the Mother Training Project.

TABLE 51: HYPOTHESIS 9: PROJECT TEACHER NOMINATIONS OF PROJECT MOTHER EXPERIMENTAL AND CONTROL GROUP MOTHERS FOR PROJECT TEACHING AND NON-TEACHING POSITIONS

	Teaching			Non-Teaching	
Project Mother	Teacher Aide	Teacher	Senior Teacher	Cook	Transportation Aide
Experimental Group	16	13	8	10	10
Control Group	1	2	1	6	6
Neither/Both	2	4	10	3	3

Descriptive Findings: Project Mothers. The responses of Project mothers to the "Evaluation of Project Experience" interview administered at post-test are presented in Appendix O. When these mothers, experimental and control groups, were asked to define the purpose of the Project volunteer program, they said it was designed to benefit the staff and families (32.1%) and/or to offer learning experiences and social outlets for mothers (28.5%). They preferred to work generally with the children (32.1%), to read to the children (17.9%), to do kitchen chores (14.2%) and to assist with field trips (14.2%). Eighty-two per cent said there was no volunteer duty they "disliked." The sample was evenly divided (for experimental and controls as well as total group) concerning whether volunteer experiences had changed their home life in general or the way in which they worked with their children. Most mothers who said volunteering had "helped" them mentioned child or family-oriented effects whereas mothers who said no changes had occurred said they had little time to spend in the center or that volunteering conflicted with other demands upon their time. The entire sample was willing to continue volunteering, although they varied in the degree to which their willingness was unqualified. Their most frequently mentioned recommendation for the volunteer program was increased participation (46.4%).

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[1] Two Teachers were unable to make these choices since they had not had a control mother in their center or had been unable to carry out training with a Project mother.

[2] Many Teachers indicated Project mothers would be unsuited for the senior teacher role because of its heavy administrative requirements.

Predictions: Experimental Versus Control Group Project Mothers. Comparing the responses of experimental and control group mothers at a descriptive level (a breakdown of data according to these groups is not presented in this report) indicates the two groups were highly consistent in their evaluation of their volunteer experiences since entering the Project. This was not expected considering that the experimental group was supposed to have received intensive training in the use of teaching skills while the control group participated in the ongoing, less "teaching-oriented" volunteer program. As it turned out, Project Teachers were less successful in getting the experimental group mothers to come to the centers as often as was deemed necessary to accomplish the training objectives by May. Although some control group mothers never volunteered at a center during the six month interim between pre- and post-test (see Table 52), as a group the control mothers did make as many visits and spend as much time in the centers as the experimental group. (T-test comparisons were non-significant for volunteer visits and hours.) Both groups were highly variable in terms of individual volunteer participation which merely reflects the difficulty in obtaining consistent volunteer participation from parents scattered over a wide rural area and for whom transportation and baby sitting problems are overwhelming.

Table 53 presents a summary of Project experimental and control group preferences for teaching (i.e., teacher aide, teacher, senior teacher) and non-teaching (i.e., cook, transportation aide) positions as well as their evaluation of how qualified they considered themselves to be for teaching and non-teaching positions. Although these preference and qualification distributions do not differ significantly from chance (two-sample Chi Square Tests) the experimental group tended to prefer and to feel qualified for teaching positions more than the control group.

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TABLE 52: HYPOTHESIS 9: NUMBER OF VISITS AND HOURS SPENT AS A VOLUNTEER IN A PROJECT CHILD DEVELOPMENT CENTER, SEPTEMEBER, 1969, THROUGH MAY, 1970. PROJECT MOTHERS (EXPERIMENTAL VERSUS CONTROL)[1]

	PROJECT MOTHERS	
	Experimental Group	Control Group
N	17	11
Total Volunteer Visits:		
Mean	20.47	18.09
Standard Deviation	13.68	25.64
Range	3-55	0-92
Total Volunteer Hours:		
Mean	90.47	104.82
Standard Deviation	56.72	174.40
Range	15-199	0-615

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[1] These data are based upon those mothers who completed the Mother Training Project and who received both pre- and post-test measures.

TABLE 53: HYPOTHESIS 9: REPORTED PREFERENCE AND QUALIFICATION FOR PROJECT TEACHING AND NON-TEACHING POSITIONS. PROJECT MOTHER EXPERIMENTAL AND CONTROL GROUPS

JOB PREFERENCES:

	Teaching	Non-Teaching	
Project Mother			
Experimental Group (N=17)	13	4	
Control Group (N=11)	7	4	
SELF-EVALUATED QUALIFICATIONS:			Neither
Experimental Group (N=17)	10	3	4
Control Group (N=11)	4	6	1

Time pressures and the general lack of significant differences between experimental and control groups on measures associated with the Mother Training Project led to a decision not to assess responses to the "Evaluation of Volunteer Experience" interview in terms of gain in use of teaching skills (see section on Hypothesis 6 results).

In terms of the preceeding data and the analysis based upon job choices, it may be concluded that there were no clear indications that experimental group mothers experienced a qualitatively better teacher training program than that experienced by control group mothers during the six-month period when the Mother Training Project was being carried on in addition to the regular volunteer program. It is possible that Teachers participating in the Mother Training Project generalized their approach with experimental mothers to control mothers. It is also possible that the stress placed upon experimental group mothers by Teachers seeking to get them coming into the center for "training" resulted in decreasing the amount of time these women were able to spend actually carrying out teaching duties. This seems rather likely when it is recalled that several Teachers were unable to plan their training activities ahead of time or to gear them to the mother's level of understanding and competence.

It is interesting to note that most Teachers were more willing to accept the idea of training mothers to use teaching skills when the objectives were to increase the mother's skills with her own children as well as with other children in the center. That such training might lead to employment of a mother within the Project was not an easy idea for most Teachers (or county staff) to accept.[1] There was at least one instance in which a mother's insistence that she be considered for a position resulted in the Project staff evaluating her as "opportunistic." Although this attitude is unfortunate, it is perhaps a natural outgrowth of a greater emphasis within the Project upon the career development of non-professional staff than upon the hiring of parents. It is recognized, however, that a more positive attitude toward training parents to assume paid positions is needed and congruent with the broad objective of training parents to be actively involved in the learning experiences of their children.

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[1] Project staff were supportive of parent efforts to gain employment in other Head Start programs, however. Both the experimental and control mothers in a Lee county center were hired as Head Start aides based upon their volunteer participation in the Project.

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DISCUSSION

Conclusions regarding the Mother Training Project are necessarily limited to a descriptive integration of findings related to the various hypotheses. The overwhelming amount of data collection undertaken in this year's evaluation, coupled with the necessity of completing all data analyses within the same contract year, precluded carrying out multivariate analyses which might have documented statistically any inter-relationships between intellectual, attitudinal, teaching style and child performance variables sampled. This limitation does not preclude summarizing overall findings and drawing certain implications from them for parent and staff training in Head Start programs, however.

The comparisons made between middle class and Project samples suggest for both children and adults that significant change in intellectual functioning is less easily accomplished within Head Start programs than change in the use of specific learning related skills. Despite the consistent intellectual superiority of middle class mothers to Project Teachers and mothers and the higher I.Q. scores earned by middle class children in comparison to Project children, there were few significant group differences in teacher effectiveness and task performance, especially at the time of post-test. Although Project Teachers had obtained more formal education, had higher educational aspirations for themselves and their children, and appeared to share more attitudes about early childhood education with middle class mothers, they were no better, and in some cases less effective, than Project mothers in teaching children to perform structured tasks.

To illustrate, it was found that middle class mothers were more likely to report the use of instructive and personal-subjective control strategies with their children, whereas both Project Teachers and mothers were more likely to use imperative and status-normative strategies. In the Block Sort Teaching Task, middle class children scored higher initially than Project children. Their mothers used significantly more positive reinforcement than Project Teachers and mothers and took less time to teach the task. Over time, Project mothers increased their use of negative reinforcement (including "frowning"), the sorting principle (labeling dimensions), information about the task, and pointing to direct the child's attention or his response. Some of these changes (although it is unclear which ones) may have been related to the general tendency on post-test for their children to perform closer to the pretest middle class criterion and somewhat higher (performance scores) than children taught by Project Teachers. Noting the general tendency for children taught by Project Teachers to perform no better and sometimes worse on the Block Sort Task, it is interesting to observe as well that Project Teachers took longer to teach this task and used less verbal directing statements than Project mothers. However, Teachers also used significantly more positive reinforcement and "smiling" than Project mothers.

Although the use of positive reinforcement was relatively high in both the middle class and Project Teacher groups, its effectiveness in these groups apparently was not the same, if child performance is used as the criterion. The contingencies of teaching variable usage, e.g., whether reinforcement was used following errors, correct responses or non-responses, were not analyzed in this study, primarily because taped transcripts and observational commentaries were not precise enough to permit such analyses. However, the above findings regarding similarities and differences in the use of verbal and nonverbal teaching techniques suggest that the use of given techniques may have had a different impact within the middle class and Project samples. This impact may have varied as a function of whether the "teacher" was the child's mother or his Teacher. A closer examination of these contingencies is needed, however the instrumentation required to obtain a sufficiently precise rendering of adult-child interactions was beyond the scope of this investigation.

What the above differences in teaching techniques and effectiveness do suggest, however, is that mothers and Project Teachers did not view their roles in the Teaching Tasks situation in the same way.[1] This difference in role perception was probably related to whether the adult was teaching her own child as well as to whether she viewed herself as a "teacher." Informal observations made by examiners suggested that Project Teachers seemed oriented toward demonstrating their teaching skills, whereas mothers in both the Project and middle class samples seemed more focussed upon their child's performance. Several Teachers complicated the tasks by introducing irrelevant twists. In such instances, the child often became confused, which in turn precipitated non-task orientated nurturance from the Teacher, perhaps in an effort to regain the child's good will. On the Block House Task, which was difficult and frustrating for most children, several Teachers gave in to the child and participated cheerfully with him while he built simple towers or otherwise avoided the task at hand. Few if any mothers permitted such digressions, even when it was obviously hard for them to insist that the child build the house.

It was also apparent from the data analyses that while Project Teachers changed mainly in their overall use of positive reinforcement, Project mothers became increasingly specific in the type of information they gave the child and in their tendency to use negative feedback. On the basis of these observations and findings, it may be concluded that the direction of change in teaching effectiveness was a function of role perception and whether the adult was focussed upon her own adequacy or the child's performance. However, without additional study of these variables such conclusions are speculative at best.

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[1] Whether these findings and observations would have been the same for Project mothers with other than their own children cannot be ascertained in the present study.

It is quite evident that this "pilot" effort to have Project Teachers train mothers in the use of teaching skills was not effective if differences between experimental and control groups on the various measures are used as the criterion of success. However, there is considerable evidence that most Teachers were thwarted by various factors in carrying out training procedures as intended. Some problems were related to uncertainty regarding the funding of this evaluation, while others are inherent within the present role structure of county level Project staff. One positive outcome of this study was the demonstration that Project Teachers are enthusiastic about making home visits and training parents, provided they can receive appropriate training and support from their fellow staff. Furthermore, these procedures had the general effect of increasing rapport between parent volunteers and staff members. Providing such efforts are followed up and extended (see Recommendations section at the end of this report), this pilot study has initiated an important step toward defining the roles of Project staff as "change agents" rather than as positions within an administrative framework. However, the implications of such training in terms of hiring parents as Project staff appear to be conflict-laden at present and worthy of consultation among staff members and within the county level PACs.

It may be said in conclusion that this study has demonstrated that Project mothers and Teachers can improve their teaching effectiveness in response to brief instructions from an examiner in a structured learning situation even if the relationship of this improvement to more extensive training experiences between mothers and Teachers was minimal. The implication of this finding is that although socioeconomic class differences in teaching style are of interest, focussing intervention with disadvantaged parents upon changing their underlying communication style may be unnecessary and largely self-defeating (considering the degree to which such systems are entrenched as part of subcultural life styles). However, training of parents as well as non-professional Head Start staff in the use of specific skills in structured learning situations where the objectives are apparent is not only feasible but may prove to be a more appropriate operational definition of effective teaching style.

IV. Hypothesis 10: Performance of Rural Child Care Project Children on the UCLA Language Tests.

Hypothesis 10 states that,

> "Children enrolled in the Project for a minimum of one year and who have attended a child development center for a minimum of 130 days will score higher on the UCLA Language Tests (Stern, 1968) than a comparable group of children enrolled in the Project for a maximum of six months and who have attended a child development center for a maximum of 80 days. Both groups of children will perform best on tests measuring verbal output and lowest on tests assessing expressive vocabulary, comprehension of concepts of position, conjunction, disjunction, negation and tests requiring verbal mediation."

METHOD

The design for this hypothesis called for the administration of a battery of UCLA Language Tests to a sample of Project children currently enrolled in Project child development centers in all ten counties. Although originally scheduled for January, 1970, administration of these tests was not accomplished until mid-March due to delays resulting from funding uncertainties and changes in the overall testing schedule. Project centers were closed during the summer months of 1969.

Subjects

The selection criteria for subjects included in the sample administered the UCLA Language Tests were as follows: The Old Admissions group consisted of children who (a) entered the Rural Child Care Project during the summer of 1968, (b) had attended a child development center for a minimum of 130 days as of January 1, 1970, and (c) were between five and six years of age as of February 1, 1970.[1] The New Admissions group consisted of children who (a) had enrolled in the Rural Child Care Project during the summer and fall of 1969, (b) had attended a child development center for a maximum of 80 days as of January 1, 1970, and (c) were between four and six years of age as of February 1, 1970. Because of the two year age range included in the New Admission group, this group was subdivided into Older (5-6 years old) and Younger (4-5 years old) age groups. An attempt was made at the time these subjects were selected to equalize the number of boys and girls within each group and subgroup.

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[1] No child selected for the Old Admissions group had actually attended less than 150 days. Cutoff dates for determining child development center attendance and chronological age were set at January 1 and February 1, respectively, because of the hope that testing would be accomplished on schedule in January.

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Table 54 presents a breakdown by county and group of subjects scheduled to be tested.[1] There were a total of 104 children eligible for inclusion in the sample. However due to considerations of time and money, the sample was restricted to a total of 87 children. The other 17 were scheduled as alternates by a process of random selection with the restriction that the number of subjects per county be as equal as possible. One scheduled subject was absent the day of testing and no alternate was available. Therefore, the final sample consisted of 86 subjects, 6 of whom were originally scheduled as alternates.[2] A summary of the total sample tested according to group, age at testing and sex of subject is presented in Table 55.

Instruments

Five UCLA Language Tests (Stern, 1968, 1969a,b,c) were available for use in the present study. These instruments are the Children's Auditory Discrimination Inventory (CADI), Expressive Vocabulary Inventory (EVI), Parallel Sentences Production Test (PSPT), Echoic Response Inventory for Children (ERIC), and the Visual Discrimination Inventory (VDI). Directions for administering and scoring these instruments, along with copies of the scoring sheets, are presented in Appendices P - T. Technical Reports are available only on three of the above instruments (Stern, 1969a,b,c). Other instruments anticipated in Hypothesis 10 which specifically assess verbal output, position, conjunction, disjunction, negation concepts and verbal mediation were not available for use in this study. Therefore, evaluation of Hypothesis 10 is limited to between group comparisons based upon data obtained on the five available UCLA Language Tests.

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[1] There were 52 Mother Training Project children included in this sample. Three others were listed as alternates but were not used. Thirty-one Mother Training Project children were actually tested with all but one in the New Admissions Group.

[2] Two children tested were Negro and were left in the sample because in previous studies conducted by Stern (1969a,b,c), race was not found to be a determining factor in UCLA test performance.

TABLE 54: HYPOTHESIS 10: RURAL CHILD CARE PROJECT CHILDREN SCHEDULED FOR ADMINISTRATION OF THE UCLA LANGUAGE TESTS ACCORDING TO COUNTY, ADMISSIONS GROUP AND AGE.

	OLD ADMISSIONS GROUP	NEW ADMISSIONS GROUP	
County	(5-6) Number Scheduled	(5-6) Number Scheduled	(4-5) Number Scheduled
Elliott	2(1)*	2	4
Floyd	0	4(1)	4
Harlan	0	5	5(1)
Knott	5(1)	0	0
Lee	5**	2(1)	2
Letcher	2	3(1)	4(1)
Magoffin	5	2	3(1)
Morgan	3(1)	3	1
Owsley	2(5)	6(1)	2
Wolfe	4(1)	5(1)	2
Totals:	28(9)	32(5)	27(3)

*Alternates are indicated by parentheses.
**One subject was excluded from the sample because he was deaf.

TABLE 55: HYPOTHESIS 10: RURAL CHILD CARE PROJECT CHILDREN TESTED ON THE UCLA LANGUAGE TESTS ACCORDING TO ADMISSIONS GROUP, SEX AND AGE.

	OLD ADMISSIONS GROUP	NEW ADMISSIONS GROUP	
Sex	(5-6)	(5-6)	(4-5)
Males	15	16	14
Females	12	17	12
Totals:	27	33	26

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Each of the five UCLA tests may be described briefly as follows: The Children's Auditory Discrimination Inventory (CADI) consists of 38 pairs of pictures (line drawings). One member of each pair is a nonsense picture designated by a nonsense word (e.g., "hujuj"), whereas the other member of the pair is a familiar picture with a familiar label (e.g., "girl"). The examiner names each picture in a given pair and then repeats the name of one of them, asking the child to point to the picture named. On half the items the nonsense picture serves as the stimulus, on the other half the familiar picture is the stimulus. This test was designed to measure auditory discrimination in young disadvantaged children without the confounding effects of linguistic skill, vocabulary size and task difficulty (Stern, 1969a). Word pairs range from gross to minimum auditory contrasts. There are two alternate forms of this test.

The Expressive Vocabulary Inventory (EVI) is designed to measure how well young disadvantaged children use the different parts of speech they are expected to possess when they reach kindergarten level. It has 40 pictures representing various parts of speech occuring with high frequency in primers, word lists, intelligence tests and tape recordings of classroom speech. The examiner asks the child to name each picture or to describe something about it. Questions are phrased to elicit the desired part of speech (noun, verb, preposition, adjective, adverb, pronoun).

The Parallel Sentences Production Test (PSPT) assesses how well a child understands and expresses comparative concepts. The test contains 20 items. Each item consists of two line drawings. The examiner reads a sentence describing one of the drawings and then asks the child to tell about the other picture. (E.g., Examiner: "The fat lady sat on a little chair." Child: "The skinny lady sat on a big chair.")

The Echoic Response Inventory for Children (ERIC) was designed to determine how well a child can reproduce (imitate) sentences that are spoken by an adult in standard English. It is assumed that the test measures auditory perception, verbal expressiveness, memory and articulation (Stern, 1969c). The Echoic Response Inventory for Children consists of 20 sentences arranged in order of complexity and length which contain a vocabulary familiar to children from four to six years of age. There are two parallel forms of this test.

The Visual Discrimination (VDI) has 26 training items and 33 test items composed of pictures (line drawings) which assess visual discrimination. On a given item the examiner shows the child a group of drawings (familiar objects, geometric shapes or letter-like forms)

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and then asks the child to make a discrimination based upon matching a stimulus drawing with the same drawing located in a group of drawings ("Find the cat." "Point to the one just like this one.") Discriminations vary according to similarity of shape and contrast (e.g., broken or solid outline).

A complete set of each of these five instruments was prepared(with permission[1])for each member of the Research staff for use in the field. The stimulus and response items were the same as those employed by Dr. Stern and her staff with two exceptions: some of the drawings of children with Negro or Oriental features were altered to make them appear Caucasian. In addition, the tape recording employed in the administration of ERIC was redone by a female Research staff member who is a native of the Appalachian region.

Procedure

Administration of the UCLA Language Tests was done by four members (two males and two females) of the Research staff working in teams of two. Each child in the sample was tested individually by a member of the team. Rooms were made available in the child development center, in a nearby school, Project county office, or other facility for testing purposes during the morning and early afternoon.

Members of the Research staff teams had been trained prior to going in the field to administer the tests according to procedures outlined in the UCLA tests manuals. In some instances these procedures were supplemented by the Research staff (see Appendices P - T). Ordinarily, no more than two of the tests are administered at any one session. However, due to the time and expense involved, it was decided that all five tests would be administered during one session in the following order:[1]

A. Children's Auditory Discrimination Inventory (CADI), Forms A & B
B. The Expressive Vocabulary Inventory (EVI)
C. Parallel Sentences Production Test (PSPT)
D. Echoic Response Inventory for Children (ERIC), Forms A & B
E. Visual Discrimination Inventory (EVI)

With every other child the order of testing was reversed to insure that data were collected equally for all instruments. If the child became fatigued, the examiner discontinued testing and returned later to complete the session. Table 56 shows that 33 tests were discontinued. Table 57 summarizes the reasons tests were discontinued. Twenty-six children failed to complete one or more of the tests. Twenty-four of them did not complete the VDI because they failed the criterion items which must be passed before the test items can be administered. Seventeen of these subjects were in the New Admissions Group (4-5 years old). This indicated that the VDI was too difficult for the younger children.

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[1] Dr. Carolyn Stern, personal communication, March 2, 1970.

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Each team member was responsible for administering equal numbers of forms A and B of CADI and ERIC. Table 58 summarizes how many A and B forms of CADI and ERIC were administered. In all cases, a child received the same form of these two tests.

TABLE 56: HYPOTHESIS 10: UCLA LANGUAGE TESTS NOT COMPLETED ACCORDING TO ADMISSIONS GROUP, SEX AND AGE OF CHILD.

	OLD ADMISSIONS GROUP (5-6)		NEW ADMISSIONS GROUP (5-6)		NEW ADMISSIONS GROUP (4-5)		
Test	Male	Female	Male	Female	Male	Female	Totals
CADI							
PARALLEL SENTENCES		1	1	1	2	1	6
ERIC			1*		1*		2
EVI						1	1
VDI	2	3	2	1	10	6	24
Totals	2	4	4	2	13	8	33

*Form B

TABLE 57: HYPOTHESIS 10: SUMMARY OF REASONS UCLA LANGUAGE TESTS WERE DISCONTINUED.

Test	Reasons	Number of Subjects
VDI	Failed to complete criterion items	24
PARALLEL SENTENCES	Subject would not verbalize	2
	Subject did not understand	3
	No response to items	1
ERIC	Subject would not verbalize	1
	No response to items	1
EVI	Ten incorrect responses in a row	1

TABLE 58: HYPOTHESIS 10: RURAL CHILD CARE PROJECT CHILDREN ADMINISTERED FORM A OR B OF THE CADI AND ERIC ACCORDING TO ADMISSIONS GROUP, SEX AND AGE OF CHILD.*

	FORM A ERIC & CADI Male	 Female	FORM B ERIC & CADI Male	 Female	Totals
OLD ADMISSIONS GROUP (5-6)	9	7	6	5	27
NEW ADMISSIONS GROUP (5-6)	8	10	8	7	33
NEW ADMISSIONS GROUP (4-5)	9	7	5	5	26
Totals:	26	24	19	17	86

*The ERIC and CADI are the only UCLA Language Tests that have two forms.

Due to mechanical problems and outside noise a total of 37 children were administered the ERIC directly by the examiners (male) rather than by means of a tape (female voice).

Scoring

Appendices P - T present instructions for scoring. All tests were scored according to these instructions and checked for accuracy and interpretation. A listing was made of common errors encountered in scoring. Any child who discontinued a given test was eliminated from all analyses involving that test.

RESULTS

Because of the complexity of the findings obtained for each of the five UCLA Language Tests employed in this study, results will be presented separately for each individual test. In all cases, however, the same design for analysis was followed. That is, the performance of Project children was compared with respect to: (a) Project Experience (less than one year in the Project = New Admissions group ; more than one year in the Project = Old Admissions group), (b) Age (4-5 years old, 5-6 years old), and (c) Sex. Analysis of variance (linear hypothesis model)[1] and two sample t-tests for independent samples were employed as the major statistical tests of significance. In all analyses, the level of significance was $p < .05$.

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[1] Performed at the University of Kentucky Computing Center.

The general prediction made for all comparisons is that children who have attended a Project child development center for more than one year (a minimum of 130 days) will perform at a higher level on UCLA tests than children who have experienced less than one year of the Project child development program (a maximum of 80 days). Because of the possible confounding effects of age and sex differences, sub-group comparisons incorporating children of the same age or sex are included in the analyses testing the general prediction.

Although all of the tests anticipated in Hypotheses 10 were not available for use in this study, it is of interest to determine the relative performance of Project children on all five UCLA tests. Therefore, a report is given at the end of this section on analyses involving all UCLA tests.

Children's Auditory Discrimination Inventory (CADI)

Although the CADI contains 38 pairs of items yielding a total score range of 0 - 38, Stern (1969 a) has reported that using a 19 item score based upon those items where the nonsense picture-word serves as the stimulus (ie., one-half the items on either form) yields greater between-groups discriminations. In confirmation of her finding, Table 59 presents a summary of difficulty levels associated with all 38 item pairs. In 27 cases where the stimulus member of the pair was the nonsense picture-word, the difficulty rank is higher, whereas in only 11 cases was the item difficulty level higher if the familiar picture-word served as the stimulus.

There is evidence on the basis of percentile ranks attained by Project children that those given CADI Form A performed less adequately than those administered CADI Form B (see Table 60). Within the Old Admissions group, there was a significant difference between Forms A and B (t=2.14, df=25, p<.05, two-tailed test). Table 61 presents a summary of these differences. Children in the New Admissions group (N=59), 4-5 year olds (N=26), 5-6 year olds (N=60) and males (N=45) and females (N=41) did not differ when those administered CADI Form A were compared to those administered CADI Form B. However, because of the difference obtained for children in the Old Admissions group and the results of the percentile rank comparisons, it was decided to perform all additional analyses based upon CADI scores separately for Forms A and B.

A series of 2 X 2 analyses of variance were performed to assess the following effects: (a) 5-6 year olds: Sex X Admissions group (children are the same age but vary in length of Project experience), (b) New Admissions group: Sex X Age (4-5 versus 5-6 year olds) (children vary in age but not in length of Project experience), and (c) Total sample: Sex X Age. The dependent variable for these analyses was total score (0 - 19).

TABLE 59 : HYPOTHESIS 10: CADI ITEM PAIRS WITH DIFFICULTY LEVELS. FORM A AND FORM B. TOTAL SAMPLE (N=86)

Item Pair	Difficulty Level		Item Pair	Difficulty Level	
	Form A	Form B		Form A	Form B
1. Girl, hujuj	3.0	8.5*	20. Mouse, mouf	33.0*	8.5
2. Phone, volvap	3.0*	8.5	21. Shirt, sirt	9.0	16.5*
3. Horse, ulna	6.0*	2.5	22. Leaf, leath	38.0*	36.0
4. Clock, koopay	3.0	2.5*	23. Coat, poat	23.0*	8.5
5. Sleeping, sagrole	3.0	8.5*	24. Bus, bush	23.0	22.5*
6. Wagon, zagon	9.0*	2.5	25. Door, goor	17.0*	8.5
7. Boat, boatch	33.0	16.5*	26. Cow, tow	20.5	22.5*
8. Dog, dob	17.0	27.5*	27. Stove, stothe	33.0*	32.5
9. Sun, thun	20.5*	16.5	28. Read, reab	36.0*	34.5
10. Duck, dup	28.5	30.0*	29. Table, pable	17.0	13.5*
11. Egg, edd	17.0*	30.0	30. Fish, fith	7.0	22.5*
12. Scissors, fissors	12.5	22.5*	31. Bed, bej	12.5	22.5*
13. Hat, hap	25.0*	32.5	32. Money, noney	26.0*	16.5
14. Shoes, thoes	9.0*	8.5	33. Ball, gall	12.5	22.5*
15. Jump, dump	17.0	13.5*	34. Children, tildren	12.5	34.5*
16. Plane, plame	31.0*	37.0	35. Dress, dreth	23.0	27.5*
17. Valentine, thalentine	36.0*	30.0	36. Falling, thalling	28.5	38.0*
18. Church, shurch	28.5	22.5*	37. Sock, sot	28.5*	22.5
19. Book, dook	3.0*	8.5	38. Brush, brutch	36.0*	2.5

*Difficulty level of item when nonsense member of pair is stimulus; this is the item scored for the Form indicated. Unstarred value is corresponding difficulty on form which uses meaningful member of same item pair.

TABLE 60 : HYPOTHESIS 10: PERCENTILE RANKS ATTAINED BY PROJECT CHILDREN ADMINISTERED CADI FORM A OR FORM B. TOTAL SCORE.

Score	CADI Form A (N=50)	CADI Form B (N=36)
18-19	77.00	70.83
16-17	47.00	3.194
14-15	30.00	19.44
12-13	18.00	12.50
10-11	13.00	6.94
8-9	7.00	4.16
6-7	2.00	1.38
4-5	0.0	0.0
2-3	0.0	0.0

TABLE 61 : HYPOTHESIS 10: PERFORMANCE DIFFERENCES OBTAINED FOR CADI FORMS A AND B, OLD ADMISSIONS GROUP (19 ITEMS)

	OLD ADMISSIONS GROUP	
	CADI FORM A	CADI FORM B
N	16	11
Mean	14.88	17.45
SD	3.30	2.38
Range	9-19	11-19

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Several significant findings were obtained. First, for CADI Form A, there was a significant interaction between Sex and Admissions group (p<.05) for 5-6 year old children only Tables 62 and 63 summarize the variables associated with this finding and the analysis of variance. The main effect of admissions group is also significant. Although the cell means associated with the significant interaction (Table) indicated that boys with more Project experience are better on the CADI (Form A) than girls who have attended a center more than a year and that this effect is reversed for children with less than a year's experience, the only significant difference between cells is for girls in the Old and New Admissions group (t=4.05, df=15, p<.01, two-tailed test). This difference is puzzling unless it is partly due to Mother Training Project children (Hypotheses 4-9) in the New Admissions group who may have performed better on CADI because of their previous testing experiences which Old Admissions group girls have not had.

TABLE 62 : HYPOTHESIS 10: SUMMARY OF VARIABLES ASSOCIATED WITH SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING ADMISSIONS GROUP AND SEX OF CHILD. FIVE-SIX YEAR OLD PROJECT CHILDREN ADMINISTERED CADI, FORM A (19 ITEMS)

CADI, Form A: 5-6 Year Olds

	Old Admissions Group			New Admissions Group		
	N	Mean	SD	N	Mean	SD
Male	9	16.00	3.08	8	15.88	4.16
Female	7	13.43	3.21	10	18.00	.82

TABLE 63 : HYPOTHESIS 10: SUMMARY OF SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING ADMISSIONS GROUP AND SEX OF CHILD. FIVE-SIX YEAR OLD PROJECT CHILDREN ADMINISTERED CADI FORM A (19 ITEMS).

Source	df	F	p
Sex (S)	1,30	.05	ns
Admissions Group (G)	1,30	4.68	.05
S X G	1,30	5.22	.05

For CADI Form B, two interactions between sex and age were significant. One when the analysis was restricted to the New Admissions group (to control for the effects of Project experience) and one for the total sample. The variables associated with the latter, more inclusive analysis and the results of the analysis are presented in Tables 64 and 65. Here younger females scored higher on CADI Form B than did younger males ($t=2.98$, $df=8$, $p<.05$), whereas the older group of children does not show this difference. Part of the interaction is also due to the difference between males in the younger and older groups ($t=3.34$, $df=17$, $p<.01$). Younger females did not score significantly higher than older females, however.

Simple t-test comparisons between groups comprised on the basis of sex of child, age group and admissions group (within and between CADI Forms A and B) failed to reveal any significant differences.

On the basis of these results, the following may be concluded about auditory discrimination of Project children. On CADI Form A (which was significantly more difficult for Old Admissions group children) among older children only, girls in the New Admissions group performed best. On CADI Form B (which was easier for Old Admissions group children) younger girls performed better than younger boys in the New Admissions group and in the total sample. The prediction that children with more Project experience would perform better on CADI than children with less Project experience was disconfirmed. However, due to the number of children in the New Admissions group who had been previously tested as part of the Mother Training Project, the effects of Project experience alone may have been somewhat decreased by their greater experience with testing situations.

TABLE 64: HYPOTHESIS 10: SUMMARY OF VARIABLES ASSOCIATED WITH SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. PROJECT CHILDREN ADMINISTERED CADI FORM B (19 ITEMS).

	4-5 Year Olds			5-6 Year Olds		
	N	Mean	SD	N	Mean	SD
Males	5	13.60	2.97	14	17.43	1.65
Females	5	18.20	.84	12	16.25	4.14

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TABLE 65: HYPOTHESIS 10: SUMMARY OF SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. PROJECT CHILDREN ADMINISTERED CADI FORM B. (19 ITEMS)

Source	df	F	p
Sex (S)	1,32	2.58	ns
Age (A)	1,32	.78	ns
S X A	1,32	7.36	.05

The Expressive Vocabulary Inventory (EVI)

Overall performance on the EVI is depicted in terms of percentile ranks obtained by the total sample of Project children (N=85) and various subgroups constituted according to sex of child, admissions group, and age group (see Table 66). These comparisons suggest that the EVI is easiest for girls, older children and those in the Old Admissions group (where the effects of age and Project experience are confounded).

The total number correct obtained on the EVI (0-40) was subjected to a series of 2 X 2 analyses of variance incorporating the following comparisons: (a) 5-6 year olds: Sex X Admissions group (children of the same age with varying Project experience); (b) New Admissions group: Sex X Age (holding Project experience constant); (c) Total Sample: Sex X Age. The results of these analyses revealed one significant interaction between the effects of sex of child and age group which was significant for the New Admissions group and the total sample. The results of the second, more inclusive analysis are summarized in Tables 67 and 68. The main effects of sex and age group are also significant.

According to these findings, younger females scored higher on the EVI than younger males (t=3.54, df=23, p<.01, two-tailed test) and younger males scored lower than older males (t=7.02, df=41, p<.01, two-tailed test).

It must be concluded, therefore, that the general hypothesis is not confirmed with respect to performance on the EVI. These findings indicate that the ability of Project children to use parts of speech varies as a function of age and sex. Generally speaking, older children score higher than younger children on the EVI mainly due to the relatively poor performance of younger boys. There is no evidence that this language ability is improved more after one year in the Project than after two years experience. However, as was pointed out in the discussion of findings for CADI, the relatively high proportion of Mother Training Project children in the New Admissions group may have obscured any effects associated with Project experience.

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TABLE 66 : HYPOTHESIS 10: PERCENTILE RANKS OBTAINED BY PROJECT CHILDREN ON THE EVI ACCORDING TO TOTAL SAMPLE (N=85), SEX OF CHILD, AGE GROUP AND ADMISSIONS GROUP. TOTAL SCORE.

Score	Male (N=45)	Female (N=40)	Old (N=27)	New (N=58)
38-39	100.00	100.00	100.00	100.00
36-37	94.44	97.50	96.29	95.68
34-35	85.55	87.50	87.03	86.20
32-33	76.66	73.75	72.22	76.72
30-31	63.33	57.50	50.00	65.51
28-29	48.88	36.25	25.92	50.86
26-27	36.66	22.50	12.96	37.93
24-25	28.88	17.50	11.11	29.31
22-23	21.11	10.00	5.55	20.68
20-21	12.22	3.75	0.00	12.06
18-19	7.77	1.25	0.00	6.89
16-17	5.55	0.00	0.00	4.31
14-15	3.33	0.00	0.00	2.58
12-13	2.22	0.00	0.00	1.72
10-11	2.22	0.00	0.00	1.72
8-9	1.11	0.00	0.00	.86
6-7	0.00	0.00	0.00	0.00
4-5	0.00	0.00	0.00	0.00
2-3	0.00	0.00	0.00	0.00

TABLE 66 (continued): HYPOTHESIS 10: PERCENTILE RANKS OBTAINED BY PROJECT CHILDREN ON THE EVI ACCORDING TO TOTAL SAMPLE (N=85), SEX OF CHILD, AGE GROUP AND ADMISSIONS GROUP. TOTAL SCORE.

Score	4-5 Years (N=25)	5-6 Years (N=60)	Total (N=85)
38-39	100.00	100.00	100.00
36-37	100.00	94.16	95.88
34-35	98.00	81.66	86.47
32-33	92.00	68.33	75.29
30-31	82.00	51.66	60.58
28-29	70.00	31.66	42.94
26-27	62.00	16.66	30.00
24-25	54.00	10.83	23.52
22-23	40.00	5.83	15.88
20-21	26.00	.83	8.23
18-19	16.00	0.00	4.70
16-17	10.00	0.00	2.94
14-15	6.00	0.00	1.76
12-13	4.00	0.00	1.17
10-11	4.00	0.00	1.17
8-9	2.00	0.00	.58
6-7	0.00	0.00	0.00
4-5	0.00	0.00	0.00
2-3	0.00	0.00	0.00

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TABLE 67 : HYPOTHESIS 10: SUMMARY OF VARIABLES ASSOCIATED WITH THE SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. EVI TOTAL SCORE. PROJECT CHILDREN, TOTAL SAMPLE.

	4-5 Year Olds			5-6 Year Olds		
	N	Mean	SD	N	Mean	SD
Male	14	20.86	5.33	31	30.61	3.60
Female	11	28.45	4.80	29	29.83	4.35

TABLE 68 : HYPOTHESIS 10: SUMMARY OF SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. EVI TOTAL SCORE. PROJECT CHILDREN, TOTAL SAMPLE.

Source	df	F	p
Sex (S)	1,81	10.79	.01
Age (A)	1,81	28.81	<<.01
S X A	1,81	16.35	.01

Two additional factors were of interest on this test. First, the most frequent consistent errors made in response to EVI items were tabulated. Unfortunately, not all examiners uniformly followed the instruction to record errors so the reporting of consistent errors is based upon imcomplete data. Table 69 presents the item, correct response and consistent error(s) made by Project children to that item. In all cases, the consistent error had to be made by more than 10 per cent of the sample to be considered "frequent".

Inspection of the most frequent errors makes it apparent that this test assesses visual acuity and discrimination abilities as well as the ability to use verbal labels tapping various parts of speech. For example errors on items 7, 9, 31 and 35 may have been induced by the drawings themselves. This test could be improved simply by enlarging stimulus items and by reducing certain ambiguities in the pictures. However, there

TABLE 69 : HYPOTHESIS 10: CONSISTENT ERRORS MADE ON EVI ITEMS BY TEN PER CENT OR MORE OF THE TOTAL PROJECT SAMPLE (N=85)

Item No.	Correct Answer	Consistent Error(s)[1]	Per Cent of Sample Using Error
7	Walking	Running	11
9	Square	Box, Round	15
13	Skinny or Thin	Negative with Fat, Little	13
17	Animals	Named individual animals only	34
18	Larger or Bigger	Big (no contrast)	15
26	Longer (length)	Big, Bigger, Long (no contrast)	35
27	Food	Named individual foods only	57
30	Engine	Train, Choo-choo, Bus	36
31	Pennies	Money, Nickels	42
35	Letters	Numbers, ABC's, Named a Letter	65
38	Viola, Violin (Fiddle)	Guitar	71
40	On (the chair)	In	62

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[1] Errors made on the first trial. Examiners probed routinely to obtain a correct or more accurate answer in all cases.

is clear evidence that large numbers of these children do not use superordinate nouns (items 17, 27, 35) spontaneously. The fact that many do not know the name of the engine on a train (item 30) is a finding that is common for these children (it was replicated on the Preschool Inventory testing, reported in Section V). Many of them have not seen trains regularly or have not had the parts of a train labeled for them sufficiently for them to learn the names. The fact that so many children called item 39 a "guitar" may be a reflection of our current cultural focus (classical, pop, folk, western and country) upon this instrument, expecially on television shows. The tendency to say that someone is sitting "in" a chair rather than "on" a chair (item 40) is thought to be a subcultural idiom, however, no data have been collected to support this point. It is clear that children in this sample have difficulty making comparisons and using the correct vocabulary to describe such comparisons (items 9, 18, 26).

On the basis of this tabulation of consistent, frequent errors, it seems that the EVI may be useful for use with groups and individuals to assess facility in labeling, using category names (superordinate nouns) and comparative terms. The ability to use vocabulary on this test involves many additional skills, such as visual discrimination. Therefore, teachers in Project child development centers may find the EVI of value in determining what kinds of language concepts they should stress.

It was also of interest to determine how well Project children performed on items requiring the use of nouns (15 items), verb forms (10 items) and adjectives, prepositions, pronouns and adverbs (grouped into "other" category, 15 items). The number correct in each of these three categories was tallied for groups which the overall analysis of variance indicated differed significantly from each other on EVI total score (see Tables 67 and 68). Group means for each of the three categories are presented in Table . Simple t-test comparisons indicated that younger boys scored significantly lower than older boys in the correct use of nouns (t=4.82, df=43, p<.01, two-tailed test), the correct use of verbs (t=4.18, df=43, p<.01, two-tailed test), and in the correct use of "other"parts of speech (t=7.15, df=43, p<.01, two-tailed test). Boys and girls in the older group did not differ significantly from each other in their ability to use parts of speech correctly on the EVI. T-test comparisons between younger girls and boys also confirmed that younger girls scored higher in the use of nouns (t=2.36, df=23, p<.05, two-tailed test), verbs (t=2.33, df=23, p<.05, two-tailed test), and "other " parts of speech (t=3.88, df=23, p<.01, two-tailed test). These data indicate that the significant interaction due to the effects of age and sex of child upon EVI total score was replicated when use of separate parts of speech was considered as the dependent variable.

TABLE 70 : PERFORMANCE OF PROJECT CHILDREN ON THE EVI AS A FUNCTION OF THE AGE AND SEX OF CHILD AND PART OF SPEECH SAMPLED (NOUN, VERB, PREPOSITION, ADJECTIVE, ADVERB OR PRONOUN). TOTAL SAMPLE.

NOUNS

	4-5 Year Olds			5-6 Year Olds		
	N	Mean[1]	SD	N	Mean	SD
Males	14	6.43	2.38	31	9.55	1.75
Females	11	8.73	2.24	29	9.45	1.97

VERBS

	4-5 Year Olds			5-6 Year Olds		
	N	Mean	SD	N	Mean	SD
Males	14	8.21	1.58	31	9.61	.62
Females	11	9.45	.69	29	9.17	.85

OTHER
(Prepositions, Adjectives, Adverbs and Pronouns)

	4-5 Year Olds			5-6 Year Olds		
	N	Mean	SD	N	Mean	SD
Males	14	6.21	2.55	31	11.45	2.06
Females	11	10.27	2.41	29	11.21	2.37

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[1] Number correct.

Additional analyses based upon the total group of Project children indicated they were correct on items involving the use of nouns only 59.29 per cent of the time. They gave correct answers to 69.01 per cent of the "other" category items. As a group they did better on verb items, 92.11 per cent of which they answered correctly.

Parallel Sentences Production Test (PSPT)

An overall description performance on the PSPT in terms of percentile ranks based on total score is presented in Table 71 for the total sample and for groups according to sex of child, age and Project experience (admissions group). These descriptive summaries of PSPT scores indicated that females and older children performed at higher levels than males and younger children, respectively.

Total PSPT score (0-149) was subjected a series of 2 X 2 analyses of variance which incorporated the following independent variables: (a) 5-6 year olds: Sex X Admissions group (children are the same age but vary in length of Project experience), (b) New Admissions group: Sex X Age (4-5 versus 5-6 year olds) (children vary in age but not in length of Project experience), and (c) Total sample: Sex X Age.

Two analyses revealed significant effects. For the New Admissions group the main effects of sex and age were significant ($p<.05,<.01$), whereas in the total sample of Project children only the main effect of age was significant ($p<.01$). Group means associated with these effects and the summary of these significant analyses are presented in Tables 72 - 75.

These findings clearly show that older children scored higher on the PSPT than younger children. The tendency for girls to score higher than boys is greatest among younger children. Thus, the expectation that children with more Project experience would score higher has been disconfirmed again, despite the significant effects associated with age and sex of child.

One other comparison of interest was accomplished. Table 76 summarizes the median and range of points earned on the PSPT per item for all Project children tested (N=80). Children earned the fewest of the possible points on items 4, 8, 13, 15, 19 and 20. Most of these items involve making complex comparative statements. For example, in item 8, the stimulus sentence (read by the examiner while pointing to the picture) is "The boy standing up and smiling is happy." The child, in order to make a parallel construction which gets full credit, must then describe the response picture by including the following comparisons (underlined): "The girl sitting down and crying is sad."

For some reason, children (especially younger boys) also found item 4 very difficult (Stimulus: "Some boys grow up to be doctors." Response: "Some girls grow up to be nurses.") There is no apparent explanation for this finding, except that in several centers at the time of UCLA testing, these children had just undergone a rather traumatic mass innoculation against rubella conducted by county health departments.

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TABLE 71 : HYPOTHESIS 10: PERCENTILE RANKS OBTAINED BY PROJECT CHILDREN ON THE PSPT ACCORDING TO TOTAL SAMPLE (N=80), SEX OF CHILD, AGE GROUP AND ADMISSIONS GROUP (TOTAL SCORE).

Score	Male (N=42)	Female (N=38)	Old (N=26)	New (N=54)
140-149	100.00	100.00	100.00	100.00
130-139	100.00	100.00	100.00	100.00
120-129	90.47	94.73	90.38	93.51
110-119	75.00	81.57	73.07	80.55
100-109	64.28	61.84	57.69	65.74
90-99	54.76	46.05	46.15	52.77
80-89	46.42	30.26	38.46	38.88
70-79	35.71	14.47	26.92	25.00
60-69	21.42	10.52	13.46	17.59
50-59	13.09	7.89	7.69	12.03
40-49	8.33	5.26	7.69	6.48
30-39	2.38	5.26	7.69	1.85
20-29	0.0	2.63	3.84	0.0
10-19	0.0	0.0	0.0	0.0
0-9	0.0	0.0	0.0	0.0

TABLE 71 (continued): HYPOTHESIS 10: PERCENTILE RANKS OBTAINED BY PROJECT CHILDREN ON THE PSPT ACCORDING TO TOTAL SAMPLE (N=80), SEX OF CHILD, AGE GROUP AND ADMISSIONS GROUP (TOTAL SCORE).

Score	4-5 Years (N=23)	5-6 Years (N=57)	Total (N=80)
140-149	100.00	100.00	100.00
130-139	100.00	100.00	100.00
120-129	95.65	91.22	92.50
110-119	86.95	74.56	78.12
100-109	82.60	55.26	63.12
90-99	76.08	40.35	50.62
80-89	56.52	31.57	38.75
70-79	41.30	19.29	25.62
60-69	32.60	9.64	16.25
50-59	21.73	5.26	10.62
40-49	15.21	3.50	6.87
30-39	4.34	3.50	3.75
20-29	0.0	1.75	1.25
10-19	0.0	0.0	0.0
0-9	0.0	0.0	0.0

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TABLE 72 : HYPOTHESIS 10: SUMMARY OF VARIABLES ASSOCIATED WITH THE SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. PSPT TOTAL SCORE. PROJECT CHILDREN, NEW ADMISSIONS GROUP ONLY.

New Admissions Group

	4-5 Year Olds			5-6 Year Olds		
	N	Mean	SD	N	Mean	SD
Male	12	69.08	29.63	15	96.40	20.53
Female	11	88.91	17.81	16	101.63	18.16

TABLE 73 : HYPOTHESIS 10: SUMMARY OF SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. PSPT TOTAL SCORE. PROJECT CHILDREN, NEW ADMISSIONS GROUP ONLY.

Source	df	F	p
Sex (S)	1,50	4.37	.05
Age (A)	1,50	11.16	.01
S X A	1.50	1.48	ns

TABLE 74 : HYPOTHESIS 10: SUMMARY OF VARIABLES ASSOCIATED WITH THE SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. PSPT TOTAL SCORE. PROJECT CHILDREN, TOTAL SAMPLE.

	4-5 Years Olds			5-6 Year Olds		
	N	Mean	SD	N	Mean	SD
Males	12	69.08	29.63	30	95.97	22.27
Females	11	88.91	17.81	27	95.52	25.49

TABLE 75 : HYPOTHESIS 10: SUMMARY OF SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. PSPT TOTAL SCORE. PROJECT CHILDREN, TOTAL SAMPLE.

Source	df	F	p
Sex (S)	1,76	2.65	ns
Age (A)	1,76	7.90	.01
S X A	1.76	2.90	ns

TABLE 76 : HYPOTHESIS 10: PSPT MEDIAN POINTS EARNED PER ITEM. PROJECT CHILDREN, TOTAL SAMPLE (N=80).

Item	Total Points Possible	Median	Range
1	(5)	4.7	0-5
2	(6)	4.4	0-6
3	(7)	5.1	2-7
4	(8)	4.1*	0-8
5	(8)	5.3	0-8
6	(6)	5.6	0-6
7	(7)	6.3	0-7
8	(9)	4.9*	0-8
9	(6)	4.6	0-6
10	(8)	5.9	1-8
11	(8)	4.6	0-7
12	(7)	5.8	0-7
13	(8)	2.1*	0-7
14	(6)	3.8	0-6
15	(10)	4.5*	0-10
16	(8)	5.8	0-8
17	(7)	6.3	0-7
18	(6)	3.8	0-6
19	(11)	4.3*	0-11
20	(8)	3.9*	0-8

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*Items of greatest difficulty, i.e., 4 or more points below total possible.

Echoic Response Inventory for Children (ERIC)

Because ERIC was administered in two forms (A and B) to children in this sample, initial analyses were run to determine if they differed in their performance on ERIC Forms A and B. Two sample t-test comparisons indicated that there were no significant differences between total scores (0-20) obtained on either form in the total sample or for children grouped by age, sex of child or Project experience.

The overall difficulty of items on ERIC Forms A and B is presented in Table 77. Generally speaking, items 16-20 are the most difficult, which is consistent with the assumption that as sentences increase in complexity and length they will be more difficult to imitate. However, it is apparent that some supposedly parallel items of similar length and complexity on ERIC Forms A and B were not equally difficult for children in this study.

A summary of the performances of Project children on the ERIC (Forms A and B combined) is found in Table 78 in terms of percentile ranks for grouped total scores. These comparisons suggest that females, older children and Old Admissions children (the effects of Project experience are confounded with age, however) scored higher on ERIC.

A series of 2 X 2 analyses of variance were performed to determine the effects of the following variables upon ERIC scores: (a) 5-6 year olds: Sex X Admissions group (children of the same age who vary in Project experience), (b) New Admissions group: Sex X Age (children with the same Project experience who vary in age), and (c) Total sample: Sex X Age.

These analyses produced only one significant effect. In both the New Admissions group and the total sample of Project children, older children scored higher than younger children ($p<.01$). The variables associated with this effect and the results of these analyses for the total sample are summarized in Tables 79 and 80 .

Again it must be concluded that performance on a UCLA Language Test, in this case one assessing the ability to imitate increasingly complex sentences, is not related to length of Project experience. This ability varies according to age only among Project children.

TABLE 77 : HYPOTHESIS 10: ERIC ITEM DIFFICULTY LEVELS, FORMS A AND B. TOTAL SAMPLE (N=80).

FORM A			FORM B		
Order of Difficulty	Test Order	Per Cent Passing	Order of Difficulty	Test Order	Per Cent Passing
1	1	96	1.0	3	94.1
2	7	94	3.5	2	82.4
3	2	90	3.5	4	82.4
4	8	86	3.5	11	82.4
5	9	84	3.5	13	82.4
6	5	82	7.0	1	79.4
7.5	3	76	7.0	6	79.4
7.5	4	76	7.0	8	79.4
9	13	72	9.5	5	67.6
10.5	11	70	9.5	15	67.6
10.5	14	70	11.0	12	64.7
12	15	68	12.5	7	61.8
13	10	64	12.5	9	61.8
14	6	56	14.0	10	58.8
15	12	48	15.0	17	55.9
16	17	46	16.0	14	50.0
17	16	32	17.0	16	44.1
18	20	26	18.5	19	23.5
19	19	14	18.5	20	23.5
20	18	0	20.0	18	0.0

TABLE 78 : HYPOTHESIS 10: PERCENTILE RANKS OBTAINED BY PROJECT CHILDREN ON THE ERIC ACCORDING TO THE TOTAL SAMPLE (N=84), SEX OF CHILD, AGE GROUP AND ADMISSIONS GROUP (TOTAL SCORE).

Score	Male (N=43)	Female (N=41)	Old (N=27)	New (N=57)
19-20	97.67	97.56	98.14	97.36
17-18	86.04	85.36	83.33	86.84
15-16	66.27	64.63	61.11	67.54
13-14	51.16	45.12	48.14	48.24
11-12	43.02	30.48	35.18	37.71
9-10	38.37	21.95	24.07	33.33
7-8	27.90	13.41	12.96	24.56
5-6	13.95	4.87	3.70	12.28
3-4	5.81	1.21	1.85	4.38
1-2	1.16	0.0	0.0	.87

TABLE 78 (continued): HYPOTHESIS 10: PERCENTILE RANKS OBTAINED BY PROJECT CHILDREN ON THE ERIC ACCORDING TO THE TOTAL SAMPLE (N=84), SEX OF CHILD, AGE GROUP AND ADMISSIONS GROUP (TOTAL SCORE).

Score	4-5 Years (N=25)	5-6 Years (N=59)	Total (N=84)
19-20	98.00	97.45	97.61
17-18	92.00	83.05	85.71
15-16	86.00	56.77	65.47
13-14	78.00	35.59	48.21
11-12	70.00	22.88	36.90
9-10	66.00	15.25	30.35
7-8	48.00	9.32	20.83
5-6	22.00	4.23	9.52
3-4	8.00	1.69	3.57
1-2	.87	0.0	.59

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TABLE 79: HYPOTHESIS 10: SUMMARY OF VARIABLES ASSOCIATED WITH THE SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. ERIC TOTAL SCORE. PROJECT CHILDREN, TOTAL SAMPLE.

Total Group

	4-5 Year Olds			5-6 Year Olds		
	N	Mean	SD	N	Mean	SD
Males	13	8.23	5.51	30	13.20	4.42
Females	12	9.75	4.56	29	14.72	3.06

TABLE 80 : HYPOTHESIS 10: SUMMARY OF SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. TOTAL SCORE. PROJECT CHILDREN, TOTAL SAMPLE.

Source	df	F	p
Sex (S)	1,80	2.29	ns
Age (A)	1,80	24.40	<<.01
S X A	1,80	.00	ns

Visual Discrimination Inventory (VDI)

A summary of the performance of Project children on the VDI is presented in Table 81 . Total scores (0-33) grouped according to percentile ranks indicate that generally speaking, males, older children, and the Old Admissions group scored relatively higher on the VDI (the effects of Project experience are confounded here with age, however).

Analyses of variance based upon VDI total score were performed to determine the influence of the following independent variables: (a) 5-6 year olds: Sex X Admissions Group (age is held constant while Project experience varies); (b) New Admissions group: Sex X Age (Project experience is held constant while age varies); and (c) Total sample: Sex X Age. The main effect of age was significant in the analysis of variance based upon the total sample of Project children who completed the VDI (N=61). That is, older children did better than younger ones on

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this test (p<.05). Tables 82 and 83 summarize the results of this analysis.

This finding is not surprising, since only 10 children out of the 26 tested in the 4-5 year old group were able to complete the test items on the VDI. Despite the relative simplicity of this test which only requires the child to point at the correct response in a limited array, younger Project children found it very difficult to follow the instructions, or perhaps, to sustain attention to the task. The performance of Project children on this last test of the UCLA series again confirms that there are no significant effects associated with length of Project experience or sex of child (despite the percentile rank data, see Table 81).

TABLE 81 : HYPOTHESIS 10: PERCENTILE RANKS OBTAINED BY PROJECT CHILDREN ON THE VDI ACCORDING TO THE TOTAL SAMPLE (N=61), SEX OF CHILD, AGE GROUP AND ADMISSIONS GROUP (TOTAL SCORE).

Score	Male (N=31)	Female (N=30)	Old (N=22)	New (N=39)
31-33	91.93	93.33	88.63	94.87
28-30	69.35	76.66	68.18	75.64
25-27	43.54	55.00	38.63	55.12
22-24	25.80	33.33	9.09	41.02
19-21	11.29	20.00	0.0	24.35
16-18	1.61	11.66	0.0	10.25
13-15	0.0	3.33	0.0	2.56
10-12	0.0	0.0	0.0	0.0
7-9	0.0	0.0	0.0	0.0
4-6	0.0	0.0	0.0	0.0
1-3	0.0	0.0	0.0	0.0
0	0.0	0.0	0.0	0.0

TABLE 81 (continued): HYPOTHESIS 10: PERCENTILE RANKS OBTAINED BY PROJECT CHILDREN ON THE VDI ACCORDING TO THE TOTAL SAMPLE (N=61), SEX OF CHILD, AGE GROUP AND ADMISSIONS GROUP (TOTAL SCORE).

Score	4-5 Years (N=10)	5-6 Years (N=51)	Total (N=61)
31-33	95.00	92.15	92.62
28-30	85.00	70.58	72.95
25-27	70.00	45.09	49.18
22-24	50.00	25.49	29.50
19-21	30.00	12.74	15.57
16-18	20.00	3.92	6.55
13-15	10.00	0.0	1.63
10-12	0.0	0.0	0.0
7-9	0.0	0.0	0.0
4-6	0.0	0.0	0.0
1-3	0.0	0.0	0.0
0	0.0	0.0	0.0

TABLE 82 : HYPOTHESIS 10: SUMMARY OF VARIABLES ASSOCIATED WITH THE SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. VDI TOTAL SCORE. PROJECT CHILDREN, TOTAL SAMPLE.

	4-5 Year Olds			5-6 Year Olds		
	N	Mean	SD	N	Mean	SD
Males	4	23.25	4.03	27	26.52	4.28
Females	6	21.67	6.65	24	25.38	5.17

TABLE 83 : HYPOTHESIS 10: SUMMARY OF SIGNIFICANT ANALYSIS OF VARIANCE INCORPORATING SEX OF CHILD AND AGE GROUP. VDI TOTAL SCORE. PROJECT CHILDREN, TOTAL SAMPLE.

Source	df	F	p
Sex (S)	1,57	.63	ns
Age (A)	1,57	4.12	.05
S X A	1,57	.02	ns

Comparative Performances of Project Children on the UCLA Language Tests

In the absence of published norms for the UCLA Language Tests, it was decided to compute, for the total sample of Project children tested in this study, the per cent of the possible points earned on the average for each of the five UCLA tests administered. In this way a very general indication of comparative difficulty of the tests for Project children could be ascertained.

Project children attained the highest per cent of possible points on CADI (Forms A and B combined): 84.6% (N=86). The next easiest test (for those able to complete it) was VDI (76.9%, N=61). The EVI was of intermediate difficulty, with Project children as a group (N=85) attaining 71.1% of the possible points. The most difficult tests were ERIC (62.3%, N=84) and PSPT (60.9%, N=80).

Thus, Project children, especially older ones, tended to perform at a higher level on those tests which assess auditory and visual discrimination and which also require a minimal verbal (or nonverbal) response. Naming or labeling responses, involving various parts of speech, was of intermediate difficulty. The most difficult tests were those requiring the most complex verbal responses from the children, as well as those which place the greatest strain upon memory and the ability to construct parallel comparisons based upon pictures.

The Relationship Between Performance on the UCLA Language Tests and the Wechsler Preschool and Primary Scale of Intelligence (WPPSI).

A series of Pearson Product-Moment correlation coefficients was computed to determine the relationship between chronological age (CA) at testing and performance on the UCLA tests, the interrelationships between UCLA tests, and the degree to which performance on the UCLA tests is related to performance on WPPSI scales.[1]

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[1] Forty-one children included in the "Mother Training Project (Hypotheses 4-9) were also tested on the UCLA tests.

Table 84 presents a summary of correlation coefficients obtained between (a) CA and UCLA tests, and (b) all possible combinations of UCLA tests. Chronological age is significantly related to performance on all UCLA tests except for CADI and VDI. That is, older children earn higher scores on the EVI, PSPT and ERIC tests than do younger children (p<.01). Only the EVI correlates significantly with all other UCLA tests (p<.01), whereas performance on the VDI shows little relationship to performance on other UCLA tests except for EVI and Parallel Sentences (p<.01, <.05).

TABLE 84 : HYPOTHESIS 10: INTERCORRELATIONS BETWEEN CHRONOLOGICAL AGE AT TESTING AND UCLA LANGUAGE TESTS: RURAL CHILD CARE PROJECT CHILDREN WITH ONE-TWO YEARS PROJECT EXPERIENCE.

	CADI (19 items)	EVI	PARALLEL SENTENCES	ERIC	VDI
CA	.14 (86)	.48** (85)	.29** (80)	.42** (84)	.16 (61)
CADI (19 items)		.45** (85)	.48** (80)	.29* (84)	.15 (61)
EVI			.69** (79)	.49** (83)	.44** (61)
Parallel Sentences				.52** (80)	.34* (59)
ERIC					.10 (60)

* p < .05
** p < .01

[1] Numbers in parentheses indicate how many children completed both tests and were used in the analysis.

The relationship between performance on the UCLA and WPPSI tests is depicted in Table 85 . Correlations between these measures indicate that only performance on the EVI and the PSPT is significantly related to all WPPSI I.Q. scores earned by this sample of Project children (p<.05, <.01).

There is no significant relationship between performance on ERIC and WPPSI. CADI and VDI scores are related mainly to WPPSI Performance Scale I.Q. ($p<.05$). However, in no case does the magnitude of these coefficients warrant using the WPPSI as a predictor of UCLA performance, or the reverse.[1]

TABLE 85 : HYPOTHESIS 10: CORRELATIONS BETWEEN UCLA LANGUAGE TESTS AND WECHSLER PRESCHOOL AND PRIMARY SCALE OF INTELLIGENCE: RURAL CHILD CARE PROJECT CHILDREN WITH ONE YEAR'S PROJECT EXPERIENCE.

	WPPSI (Post-Test)		
UCLA Tests	Full Scale I.Q.	Verbal I.Q.	Performance I.Q.
CADI (41)[1]	.39*	.32	.37*
EVI (41)	.48**	.44**	.40*
Parallel Sentences (39)	.36*	.33*	.33*
ERIC (40)	.30	.29	.25
VDI (32)	.32	.22	.37*

[1] Numbers in parentheses indicate how many children completed both tests and were used in the analyses.

* $p < .05$

** $p < .01$

---

[1] Subjects for these analyses were drawn exclusively from the Mother Training Project (Hypotheses 4-9) sample. Post-test WPPSI scores were used on the assumption that they reflect a more accurate assessment of intellectual functioning and because these scores were obtained at nearly the same time as the UCLA scores.

DISCUSSION

It is unfortunate that more normative data on the UCLA Language Tests were not available in time to be incorporated into the comparisons for this study. However, the administration of these tests to Project children while still enrolled in Project centers has proven useful for several reasons.

First, on the basis of the data which have already been reported, it seems clear that two years in the Rural Child Care Project does not improve performance on any of the tests over that attained after less than one year in the Project. Although no comparison data were gathered from children in summer Head Start or on youngsters without preschool experiences of any kind, it does seem surprising that children after two years of the program do no better than children of the same age with far less exposure to the child development program. Despite the assumption that children would not differ on the language tests requiring more complex functioning,[1] it is surprising that they do not differ on tests involving simpler functions, such as discrimination, as the result of Project experience.

It is interesting to note that most significant sex differences occurred only among the younger group of children. As such, these differences may be a reflection of the tendency for girls to mature earlier in the use of language skills. These findings fail to replicate those reported by Stern (1969a,b,c) for groups of three-five year old children differing in race and socioeconomic status tested in the Los Angeles, California, area. Stern reported no significant effects associated with sex of child. In addition, her data suggest that older children from lower socioeconomic groups score lower on UCLA tests than younger children from higher socioeconomic groups. While no such comparison data were gathered in this study, there is no evidence that older children in the Project sample show a decrement in linguistic functioning. However, comparative data would be required to determine if this is indeed the case.

On the basis of these findings it may be concluded that the present language program does not incorporate material on the more complex, information processing aspects of language functioning. Without such activities, older children may be missing learning opportunities which should be made available to them in the second year of their Project experience. It is recommended therefore, that the current "language curriculum" be examined in terms of what is being taught and how. Attention should be focussed upon training activities for child development staff in methods to be used in assessing the ability of children to use language as an information processing tool. Teachers need assistance in evaluating what strengths and weaknesses in language functioning their pupils have so that language activities can be planned accordingly. Most important of all, program objectives for 5-6 year olds must be examined to determine if the program they experience in their second year is essentially a re-run of the first year. Teachers will possibly need assistance in learning how to group by ability for certain structured activities designed to increase language skills. Certainly such an approach is appropriate at this point in the Project's evolution as a child development program since most of the child development staff have four-five years of experience behind them.

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[1] Because the Project curriculum does not stress structured teaching of language skills.

The UCLA Language Tests, unlike other ability measures which use a small number of items to sample given skills, offer a rich resource for individual and group evaluation of basic language and reading readiness skills. Before the Rural Child Care Project staff can incorporate such a group of tests successfully in curriculum planning, however, appropriate training must be undertaken.

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V. Hypothesis 11: A Comparison Between Rural Child Care Project, Summer Head Start, and Middle Class Children on the Preschool Inventory.

Hypothesis 11a states that,

> "Children enrolled in the Project for a minimum of one and one-half years and who have attended a child development center for a minimum of 150 days will score higher on the Preschool Inventory (Caldwell, 1967) than a comparabel group of children enrolled in the Project for a maximum of nine months and who have attended a child development center for a maximum of 100 days. Both groups of children will score highest on the Personal-Social Responsiveness subtest and at the lowest level on the Concept Activation subtests."

Hypothesis 11b states that,

> "Children enrolled in the Project for a minimum of one and one-half years and who have attended a child development center for a minimum of 150 days will score higher generally on the Preschool Inventory than a group of children of the same age enrolled in summer Head Start. However, they will score significantly lower than a group of middle class children of the same age who are indigenous to Eastern Kentucky, especially on the Concept Activation subtests."

METHOD

According to the design of Hypothesis 11, administration of the Preschool Inventory (PI) to a sample of summer Head Start children in eastern Kentucky was accomplished in late June and early August, 1969, whereas Project children and middle class children were administered the PI during April and May, 1970, as close as possible to the end of the Project program year.

Subjects

Children were selected for the summer Head Start sample according to the following criteria (verified by their teachers): (a) The child was between five and six years of age. (b) The child was to enter first grade in the fall of 1969. (c) The child's family income met OEO poverty guidelines. (d) The child had not attended any other Head Start or preschool program prior to the summer of 1969.

The Preschool Inventory was administered to 75 summer Head Start children in six eastern Kentucky counties. Five children were subsequently eliminated from the sample for reasons summarized in Table 86, which presents the sample according to county, school, and sex of child.

TABLE 86 : HYPOTHESIS 11: 1969 SUMMER HEAD START PARTICIPANTS TESTED ON THE PRESCHOOL INVENTORY ACCORDING TO COUNTY, SCHOOL, AND SEX OF CHILD (N=70).

County	School	Males	Females
Breathitt	Turner Elementary	6[1]	6
Floyd	Harold Elementary	6	6
Knox	Knox Central	5[2]	6
Leslie	Hyden High School	6	6
Perry	Dennis Wooten Elementary	6[3]	5[1]
Pike	Pikeville Elementary	6	6
	TOTALS:	35	35

---

[1] One child refused to complete test.

[2] Examiner error resulted in exclusion of child from sample.

[3] Two children excluded because family income exceeded OEO guidelines.

This sample was much larger than required to test Hypothesis 11. In addition, 12 children in the sample were from Floyd county, in which two Rural Child Care Project centers are located. This large sample resulted from initial concern that sufficient summer Head Start children could not be located for testing and the need to insure representativeness of the sample. Prior to comparing these children with Rural Child Care Project and middle class children, the size of the sample was reduced in two ways: First, all children from Floyd county were excluded from all comparisons. Second, the number of summer Head Start children was reduced overall to 40 by random selection procedures with the restriction that the ratio of males to females and the number of subjects per county remain as equal as possible. (These sample reductions did not significantly change PI score means and standard deviations.)

Table 87 presents a summary of the resulting summer Head Start sample used in all analyses by county, school and sex of child.

TABLE 87: HYPOTHESIS 11: 1969 SUMMER HEAD START CHILDREN USED IN ANALYSES ACCORDING TO COUNTY, SCHOOL, AND SEX OF CHILD (N=40)

County	School	Males	Females
Breathitt	Turner Elementary	4	4
Knox	Knox Central	4	4
Leslie	Hyden High School	4	4
Perry	Dennis Wooten Elementary	4	4
Pike	Pikeville Elementary	4	4
	TOTALS:	20	20

The sample of Rural Child Care Project children scheduled for testing on the PI was composed of 44 children included in the Mother Training Project (Hypotheses 4-9) and 40 other Project children. This sample was essentially the same as that administered the UCLA Language Tests (see Section IV, Hypothesis 10).[1] Two groups of children were identified: (a) Those admitted to the Project during the summer of 1969 (Old Admissions Group), and (b) those enrolled during the summer and fall of 1969 (New Admissions Group). An attempt was made to equalize the numbers of males and females in each group. All children in the sample were between 5-6½ years of age at time of testing and eligible to enter first grade during the fall of 1970.[2]

Table 88 presents a summary according to county, admissions group and sex of child of those Project children scheduled for testing (N=60 with 24 additional children scheduled as alternates) and the number of children actually tested. Of the 70 Project children actually tested, 31 were from the Mother Training Project sample (New Admissions Group only). A total of 14 children were not tested or had to be excluded from the sample for various reasons presented in Table 89.

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[1] Since determination of attendance criteria had been made for this sample in February, these data were not recomputed for the May testing (see Section IV).

[2] Five children in the 5-6 year old group will not be six until January, 1971, which technically makes them ineligible to enter first grade until the fall of 1971 according to Kentucky law.

TABLE 88: HYPOTHESIS 11: RURAL CHILD CARE PROJECT CHILDREN ADMINISTERED THE PRESCHOOL INVENTORY ACCORDING TO COUNTY, ADMISSIONS GROUP, AND SEX OF CHILD (N=70)

	Old Admissions Group		New Admissions Group	
County	Males	Females	Males	Females
Elliott	(3)[1] 3	(1) 1	(1) 1	(2) 1
Floyd	(0) 0	(1) 1	(2) 1	(4) 3
Harlan	(0) 0	(1) 1	(3) 3	(3) 2
Knott	(4) 4	(2) 1	(0) 0	(0) 0
Lee	(1) 1	(4) 4	(2) 1	(4) 3
Letcher	(1) 1	(1) 1	(4) 1	(2) 2
Magoffin	(2) 2	(3) 3	(1) 1	(1) 0
Morgan	(2) 2	(1) 1	(1) 1	(2) 2
Owsley	(6) 6	(1) 1	(2) 2	(4) 2
Wolfe	(1) 1	(3) 3	(2) 2	(6) 5
TOTALS:	(20) 20	(18) 17	(18) 13	(28) 20

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[1] Numbers in parentheses indicate the number of children scheduled for testing, including alternates.

TABLE 89: HYPOTHESIS 11: REASONS PROJECT CHILDREN WERE NOT TESTED ON THE PRESCHOOL INVENTORY OR EXCLUDED FROM THE SAMPLE (N=14)

Reason	N
Absent	6
Moved and/or dropped from Project	3
Refused to complete test	1
Wrong child tested	1
Alternate not needed	3

The middle class sample, according to the design for Hypothesis 11, was to be composed of children serving as the comparison group in the Mother Training Project. It was learned in March, however, that a few of these children would not be available for testing. Therefore, a total of 8 children (2 boys, 6 girls) were added to the middle class sample using the same general demographic criteria used to select middle class children for the Mother Training Project comparison group. Table 90 presents a summary by county, facility and sex of child of the 29 middle class children tested as part of the Hypothesis 11 evaluation.

TABLE 90: HYPOTHESIS 11: MIDDLE CLASS CHILDREN TESTED ON THE PRESCHOOL INVENTORY ACCORDING TO COUNTY, FACILITY, AND SEX OF CHILD (N=30)

			SEX OF CHILD	
County	Facility		Males	Females
Warren	Berea		6[1]	3
Rowan	Morehead		5	8
Madison	Richmond		3	4
		Totals:	14	15

---

[1] One male was absent.

Instrument

The Preschool Inventory (Caldwell, 1967) is designed for individual administration to children between three and six years of age. Composed of 85 items, the test assesses factors related to school success. Scoring of the test yields a total score (0 - 90 points) and subtest scores for (a) Personal-Social Responsiveness (0 - 26), (b) Associative Vocabulary (0 - 26), Concept Activation: (c) Numerical (0-19), and (d) Sensory (0 - 19). Complete information concerning the standardization of this test is available in a technical report distributed with the examiner's manual and forms published by the Educational Testing Service. Six Preschool Inventory "kits" composed of the examiner's manual and necessary materials (boxes, toy cars, crayons, checkers and pencils) were prepared for field testing.

Procedure

Each child scheduled for testing was seen individually by an examiner trained to use standardized procedures as set forth in the PI manual. Testing required from 15 to 20 minutes for most children and never exceeded half an hour. Middle class and summer Head Start children were seen in private rooms adjoining their kindergarten or preschool classrooms. Project children were tested in Project centers, nearby churches, Project county offices, or homes of staff members. Because of the close scheduling of children involved in Hypothesis 11 and post-testing of the Mother Training Project (Hypotheses 4-9, Section III) no Project child was administered the PI on the same day he was scheduled to be tested on the WPPSI and Teaching Task. Administration of the Preschool Inventory to middle class children was accomplished during late April and early May, 1970, whereas Project children tested on the PI were tested from mid-April through the end of May, 1970, in conjunction with post-testing of Mother Training Project subjects. Summer Head Start children were tested the last week in July, 1969, to insure the availability of these data.[1]

Examiners for the PI testing were members of the Research Division staff. Two males and two females were involved in testing all three groups of subjects. One male and three females did not participate in all phases of PI testing. Five examiners were required to test summer Head Start participants, four examiners tested Project children and six examiners administered the PI to the middle class sample.

RESULTS

Hypothesis 11a

It was predicted that Project children with nearly two years of experience in the child development program would score higher on the Preschool Inventory (PI) than other Project children of the same age with less than one year of Project experience. In order to test this hypothesis, total PI raw scores and total raw scores earned on each of the four PI subtests (Personal-Social Responsiveness, Associative Vocabulary, and Concept Activation: Numerical and Sensory) were subjected to two sample t-test comparisons with Project experience serving as the independent variable (Old Admissions Group versus New Admissions Group). In all analyses, the level of significance was $\rho<.05$.

The raw data for these analyses are presented in Table 91. Inspection of PI raw scores indicates the two groups did not differ, nor were any of the t-test comparisons statistically significant. In addition, the two groups of children did not differ in chronological age at testing although they differed significantly in the number of days they had attended a Project center ($t = 16.70$, $df = 68$, $\rho<.01$, one tailed test). This latter difference would be expected, of course, because of the manner in which the groups were constituted.

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[1] The research proposed for the 1969-1970 evaluation of the Rural Child Care Project was originally scheduled to be completed by June 30, 1970. Also, it was not known if any summer Head Start programs would be funded in 1970.

TABLE 91: HYPOTHESIS 11a: PRESCHOOL INVENTORY SCORES (TOTAL AND SUBTEST) OF RURAL CHILD CARE PROJECT PARTICIPANTS WHO DIFFER IN AMOUNT OF PROJECT EXPERIENCE (N=70)

	Old Admissions Group		New Admissions Group	
N	37		33	
	Mean	SD	Mean	SD
Personal-Social Responsiveness (0 - 26)	21.35	2.88	21.30	2.35
Associative Vocabulary (0 - 26)	12.65	3.68	11.88	3.83
Concept Activation:				
Numerical (0 - 19)	12.32	3.03	12.12	2.41
Sensory (0 - 19)	16.08	2.30	16.33	2.15
Total Score (0 - 90)	62.41	9.85	61.64	8.61
CA at testing (in months)	68.95	3.54	69.36	3.44
CDC Attendance* (in days)	276.73	53.13	110.88	19.45

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*$p < .01$.

Thus, it may be concluded that Project children of the same age do not improve their performance on the PI as a function of longer attendance in a Project center.

An additional prediction was made that Project children generally would score highest on the Personal-Social Responsiveness subtest and lowest on the Concept Activation subtests (mainly because performance on these items accounts for the greatest amount of variability on the PI. Caldwell, 1967). In order to determine the correctness of this prediction, PI raw scores for each subtest were compared to the published PI norms for lower class children (Caldwell, 1967). Table 92 presents the percentile ranks for total and subtest mean raw scores earned on the PI by the Old and New Admissions groups. These comparisons confirm the expectation that Project children would score highest on the Personal-Social Responsiveness subtest. Both groups of children attained the 75th percentile on this test, whereas none of their other percentile ranks exceeded 67. Contrary to expectation, however, Project children scored lower on the Associative Vocabulary subtest rather than the Concept Activation subtests. Associative Vocabulary percentile ranks ranged from 54-62, whereas percentile ranks for Concept Activation tests ranged from 61-67.

T-test comparisons based upon PI total and subtest scores between male and female children in the New and Old Admissions groups indicated no significant differences associated with sex of child.

TABLE 92: HYPOTHESIS 11a: PERCENTILE RANKS BASED UPON PRESCHOOL INVENTORY RAW SCORES. RURAL CHILD CARE PROJECT CHILDREN WHO DIFFER IN AMOUNT OF PROJECT EXPERIENCE (N=70)

	Old Admissions Group	New Admissions Group
N	37	33
	Percentile Ranks[1]	
Personal-Social Responsiveness	75	75
Associative Vocabulary	62	54
Concept Activation:		
Numerical	67	66
Sensory	61	64
Total Score	65	63
Mean C.A. (in years)	5-9	5-9

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[1] Determined by comparison with PI norms, Lower Class Group (N=481), Caldwell (1967).

On the basis of these findings, there is little support for the predictions advanced in Hypothesis 11a, with one exception. Project children did tend to score highest (as evaluated by percentile rank equivalents based upon mean raw scores) on the Personal-Social Responsiveness subtest.

Hypothesis 11b

A comparison between three groups of children was required to test predictions made in this part of Hypothesis 11. That is, Project children with nearly two years experience (Old Admissions Group), 1969 summer Head Start children with 6 to 8 weeks preschool experience, and eastern Kentucky middle class children with one or more years of preschool and/or kindergarten experience were assessed in terms of their performance on the PI. The expectation was that middle class children would do best on the PI with Project children performing at a higher level than summer Head Start children due to their longer exposure to a preschool program.

Table 93 summarizes the PI raw scores earned on the four subtests and the total test by these three groups of children. T-test comparisons established that middle class children scored significantly higher than Project children on all variables (Personal-Social Responsiveness, $t = 4.82$, $df = 64$, $\rho < .01$; Associative Vocabulary, $t = 7.96$, $df = 64$, $\rho < .01$; Concept Activation-Numerical, $t = 6.23$, $df = 64$, $\rho < .01$; Sensory, $t = 4.33$, $df = 64$, $\rho < .01$; Total, $t = 7.98$, $df = 64$, $\rho < .01$)[1] and significantly higher than the summer Head Start sample on all measures (Personal-Social Responsiveness, $t = 7.29$, $df = 67$, $\rho < .01$; Associative Vocabulary, $t = 8.28$, $df = 67$, $\rho < .01$; Concept Activation-Numerical, $t = 6.85$, $df = 67$, $\rho < .01$; Sensory, $t = 4.55$, $df = 67$, $\rho < .01$; Total, $t = 9.34$, $df = 67$, $\rho < .01$).[1] Also as predicted, Project children scored higher on the PI than summer Head Start participants (Personal-Social Responsiveness, $t = 3.23$, $df = 75$, $\rho < .01$; Total, $t = 1.85$, $df = 75$, $\rho < .05$)[1] when Personal-Social Responsiveness and Total raw scores were the dependent variables.

On the basis of these findings, it appears that the superiority of middle class children on this test is general when they are compared to disadvantaged children in full-year or summer Head Start. The superiority of full-year Head Start children to summer Head Start children is clearly evident only on the Personal-Social Responsiveness subtest, however.

It should be noted that there were significant age differences between the three groups involved in these comparisons. Summer Head Start children were significantly older than middle class children ($t = 2.03$, $df - 67$, $\rho < .05$) and Project children, Old Admissions Group ($t = 4.65$, $df = 75$, $\rho < .01$). In addition, middle class children were significantly older than Project children, Old Admissions Group ($t = 2.26$, $df = 64$, $\rho < .05$).[1] Although chronological age at testing is not significantly related to PI total score for the total sample of children tested ($N=139$, $r = .05$), these age differences should be born in mind when assessing the significance of Project and summer Head Start group comparative performances on the PI.

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[1] One-tailed tests.

TABLE 93: HYPOTHESIS 11b: PRESCHOOL INVENTORY SCORES (TOTAL AND SUBTEST) OF RURAL CHILD CARE PROJECT, 1969 SUMMER HEAD START AND MIDDLE CLASS CHILDREN (N=106)

	RCCP (Old Admissions Group)		1969 Summer Head Start		Middle Class	
N	37		40		29	
	Mean	SD	Mean	SD	Mean	SD
Personal-Social Responsiveness (0 - 26)	21.35**	2.88	18.90	3.61	24.59**	2.37
Associative Vocabulary (0 - 26)	12.65	3.68	11.83	4.19	19.62**	3.20
Concept Activation:						
Numerical (0 - 19)	12.32	3.03	11.68	3.28	16.24**	1.57
Sensory (0 - 19)	16.08	2.30	15.45	3.00	18.21**	1.37
Total Score (0 - 90)	62.41	9.85	57.85	11.72	78.66**	6.65
C.A. at testing (in months)	68.95	3.54	72.63*,**	3.32	70.93	3.43

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*$p < .05$. SHS>MC>RCCP (C.A.)

**$p < .01$. MC>RCCP>SHS (Scores), SHS>RCCP (C.A.)

Percentile ranks based upon group means (raw scores) were determined on the basis of lower class and middle class PI norms (Caldwell, 1967) found in the examiner's manual. Table 94 presents these percentile ranks for all three groups of children. Compared to middle class children in the PI normative sample, eastern Kentucky middle class children scored well above average on all tests except Concept Activation-Numerical. Project children scored above average on all tests relative to the lower class norms, whereas summer Head Start children scored average or below. For all children in this sample except the summer Head Start group, the easiest subtest was Personal-Social Responsiveness. Project children and summer Head Start children tended to find the other subtests equally difficult, whereas middle class children scored relatively higher on Associative Vocabulary than on Concept Activation subtests.

TABLE 94: HYPOTHESIS 11b: PERCENTILE RANKS BASED UPON PRESCHOOL INVENTORY RAW SCORES OF RURAL CHILD CARE PROJECT, 1969 SUMMER HEAD START, AND MIDDLE CLASS CHILDREN (N=106)

	RCCP (Old Admissions Group)	1969 Summer Head Start	Middle Class
N	37	40	29
	Percentile Ranks[1]		
Personal-Social Responsiveness	75	50	90 (95)
Associative Vocabulary	62	49	88 (90)
Concept Activation:			
Numerical	67	52	67 (90)
Sensory	61	40	73 (87)
Total Score	65	45	88 (90)
Mean C.A. (in years)	5-9	6-1	5-11

---

[1] For RCCP and Summer Head Start Groups, determined by comparison with PI norms, Lower Class Group (N=481); for Middle Class Group, determined by comparison with Middle Class Group (N=218) PI norms (Caldwell, 1967). Percentile ranks for Middle Class children compared to PI Lower Class norms indicated in parentheses.

It has already been reported that there were no significant sex differences on PI scores earned by children in the Project sample. Additional comparisons were run for children in the summer Head Start and middle class groups. Again, no significant sex differences were obtained within either of these groups on any of the PI measures.

These results confirm the general prediction advanced in Hypothesis 11 that middle class children would score highest on the PI and that Project children would score higher than summer Head Start children on the PI. The pattern of subtest performance varies between groups. Middle class children are generally superior on all tests. There is no evidence to suggest that the Concept Activation subtests are more difficult than Associative Vocabulary items for children in any of the groups compared in this study. Items on the Personal-Social Responsiveness subtest do appear to be somewhat easier for children in two of the groups, however.

Additional Findings

Intercorrelations (Pearson product-moment) between PI subtest and total raw scores for each of the three groups involved in Hypothesis 11b (Project, summer Head Start and middle class children) are presented in Table 95. The highest correlations were obtained between subtest and total test scores. That is, performance on a given subtest is related more to total performance than to performance on any other subtest. In all but the middle class group, intercorrelations between subtests suggest performance on one subtest is equally related to performance on another. For middle class children, performance on the Personal-Social Responsiveness subtest is not significantly related to performance on Concept Activation-Numerical subtest. Nor is performance on the two Concept Activation subtests significantly related for middle class children.

A number of Project children (New Admissions Group only) and middle class children administered the Preschool Inventory also were included in the sample for the Mother Training Project (see Section III, Hypotheses 4-9). This meant that these children also were tested on the Wechsler Preschool and Primary Test of Intelligence (WPPSI). Accordingly, Pearson product-moment correlation coefficients were computed between PI total and subtest scores and WPPSI I.Q. scores obtained by these children. Table 96 presents these correlation coefficients separately for Project and middle class children. With the exception of correlations between Personal-Social Responsiveness scores on the PI and WPPSI I.Q. measures, correlations between the PI and WPPSI are low and nonsignificant for middle class children, whereas they are moderate to high and significant for Project children. PI Total, Concept Activation-Sensory and Associative Vocabulary scores appear to be most highly related to all three WPPSI I.Q. scores.

TABLE 95: HYPOTHESIS 11: INTER-CORRELATIONS BETWEEN PRESCHOOL INVENTORY SUBTEST AND TOTAL SCORES FOR MIDDLE CLASS KINDERGARTEN, RURAL CHILD CARE PROJECT (OLD ADMISSIONS GROUP) AND SUMMER HEAD START CHILDREN

		Personal-Social Responsiveness	Associative Vocabulary	Concept Activation:		Total Score
				Numerical	Sensory	
		a	b	c	d	e
MIDDLE CLASS (N=29)	a.		.60**	.29	.60**	.84**
	b.			.44**	.39*	.88**
	c.				.21	.60**
	d.					.66**
RCCP, OLD ADMISSIONS GROUP (N=37)	a.		.45**	.51**	.65**	.77**
	b.			.64**	.56**	.83**
	c.				.71**	.86**
	d.					.85**
1969 SUMMER HEAD START (N=40)	a.		.56**	.69**	.64**	.86**
	b.			.47**	.55**	.80**
	c.				.70**	.83**
	d.					.84**

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*$p < .05$.

**$p < .01$.

TABLE 96: HYPOTHESIS 11: CORRELATIONS BETWEEN THE PRESCHOOL INVENTORY AND THE WECHSLER PRESCHOOL AND PRIMARY SCALE OF INTELLIGENCE (POST-TEST SCORES).[1] RURAL CHILD CARE PROJECT (NEW ADMISSIONS GROUP ONLY N=24) AND MIDDLE CLASS KINDERGARTEN CHILDREN (N=17)[2]

	WPPSI		
	Full Scale I.Q.	Verbal I.Q.	Performance I.Q.
PI			
Personal-Social Responsiveness	.52** (.57)*	.59**(.59)**	.43* (.35)
Associative Vocabulary	.62** (.18)	.62**(.36)	.56** (-.07)
Concept Activation:			
Numerical	.48* (.25)	.51**(.17)	.41* (.27)
Sensory	.75** (.15)	.69**(-.25)	.74** (.51)*
Total Score	.73** (.38)	.73**(.37)	.65** (.26)

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[1] Pretest for middle class.

[2] Data for middle class children are in parentheses.

*$p < .05$.

**$p < .01$.

However, the fact that no coefficient exceeds .75 would suggest the PI and WPPSI are not equivalent measures, even though they do overlap to a considerable extent when used to assess functioning in Project children.

Finally, the relationship between performance on the Preschool Inventory and the UCLA Language Tests (see Section IV, Hypothesis 10) was assessed by computing product-moment correlation coefficients between these two measures for Project children (New and Old Admissions Groups) who participated in both testings. Table 97 presents the results of these analyses. PI total score is the only measure which is significantly related to performance on all UCLA Language Tests.

Performance on CADI, EVI, and PSPT is significantly related to all PI scores. There is little relationship between performance on ERIC and PI measures. Although VDI scores are significantly related to all but the Personal-Social Responsiveness PI scores, these coefficients are of small to moderate magnitude. The strongest relationships appear to be between EVI, which is a vocabulary test, and Associative Vocabulary, Concept Activation: Numerical, and total PI score. Concept Activation: Sensory correlates highest with PSPT. Considering that none of these coefficients exceeds .61, it may be concluded that performance on the PI is generally not predicted by performance on the UCLA Language Tests despite the evidence that they sample similar functions.

A comparison between the two sets of correlations computed between PI scores and WPPSI and UCLA scores indicates that the WPPSI is a somewhat better predictor of PI scores than are the UCLA tests.

TABLE 97: HYPOTHESIS 11: CORRELATIONS BETWEEN THE PRESCHOOL INVENTORY AND UCLA LANGUAGE TESTS: RURAL CHILD CARE PROJECT CHILDREN (N=47, NEW AND OLD ADMISSIONS GROUP).

	UCLA Language Tests				
	CADI	EVI	PSPT[1]	ERIC	VDI[2]
PI					
Personal-Social Responsiveness	.41**	.31*	.36*	.39**	.25
Associative Vocabulary	.42**	.54**	.39*	.24	.48**
Concept Activation:					
Numerical	.40**	.61**	.38*	.15	.35*
Sensory	.37*	.41**	.53**	.27	.37*
Total Score	.51**	.60**	.52**	.33*	.48**

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[1] N=46.

[2] N=39.

*p <.05.

**p <.01.

As a means of using data from the Preschool Inventory testing to suggest areas in which Project curriculum might be strengthened, the performance of New and Old Admissions Project children (N=70) was examined on an item by item basis for each of the four PI subtests. Table 98 presents a list of items on each of the subtests which 50 per cent or more of the Project sample failed to pass.

TABLE 98: HYPOTHESIS 11: PRESCHOOL INVENTORY ITEMS ACCORDING TO SUBTEST WHICH WERE FAILED BY 50 PER CENT OR MORE OF PROJECT CHILDREN (OLD AND NEW ADMISSIONS GROUPS, N=70)

Subtest	Item	Content
Personal-Social Responsiveness	4	Give birthdate
	22	Pick middle size box
Associative Vocabulary	27	Name train engine
	28	Name train caboose
	29	Name, demonstrate sawing motion
	30	Name, demonstrate elevator motion
	31	Name, demonstrate ferris wheel motion
	33	Name, demonstrate waterfall motion
	35	Give name of hot season (summer)
	36	Give name of cold season (winter)
	37	Name present season
Concept Activation:		
Numerical	51	Count number of toes
	56	How many wheels does a rowboat have?
	60	Use of more (versus less)
	65	Seriation: Point to the second one
	66	Seriation: Point to the next to the last one
Sensory	81	Which of these (crayons) is the color of the sky?

On the Personal-Social Responsiveness subtest, many Project children could not tell the examiner the month (or month and day) in which they were born. In addition, most children had difficulty in picking out the "middle size" box in a group of three boxes used in items which test for use of prepositions and concepts of size. On the Associative Vocabulary subtest most children could not name the engine and caboose of a train. Many children said they had not seen real or toy trains. (This finding was replicated on the EVI, Section IV, Hypothesis 10.) Items 29-33 entailed giving a verbal description of a motion and then performing it. Many children could perform the motion without being able to provide a label for their actions. In some cases the children missed these items because they were not familiar with the object. In general, Project children did poorly in naming the seasons of the year. On the Concept Activation: Numerical subtest, Project children missed items 51 and 56 mainly because of inattention to the questions. That is, many children forgot to count more than five toes. They failed to recognize the "trick" in item 56 and responded in terms of an established response set. Again, the relative concepts of quantity (more, less, the same) gave them difficulty. In arranging five checkers in a row, Project children could identify "first", "last" and "middle" more readily than "second" or "next to last". Most children who missed item 81 (Concept Activation: Sensory) did so because they selected yellow or white crayons. This was a common response among all Head Start children tested and may reflect their limited experience with art media. Since many children paint or color on white butcher paper, they may have confused the color of "real" sky with the background color or "sky" when they are drawing. It is also possible that some children confused "sky" with "sun" on this item.

Items 43-47 (for which 0-2 points are possible) on the Associative Vocabulary subtest were not represented on the list of items missed by 50 per cent or more of the Project sample since the majority of children obtained at least one point for each of them. These items require the child to give a verbal description of various adult roles (dentist, policeman, teacher, father, mother). In all cases, more Project children scored one point rather than two points on these items, indicating that their understanding of adult roles is limited.

DISCUSSION

The finding that children with almost two years of exposure to the Rural Child Care Project child development program do no better on the Preschool Inventory than children of the same age with less than one year of Project participation confirms findings reported earlier on the results of administering the UCLA Language Tests to the same sample (see Section IV, Hypothesis 10). As was pointed out earlier, the presence of Mother Training Project children in the New Admissions Group may have reduced somewhat the likelihood of obtaining significant differences based upon Project experience due to the greater testing experience of these children. However, the similarity of performance on the Preschool Inventory is so close for New and Old Admissions Group children that it seems unlikely the greater testing experience of some subjects could have obscured real between groups differences so completely.

It seems justified to conclude, on the basis of these finding and those obtained for the UCLA Language Tests, that the two year child development program presently offered by the Rural Child Care Project may not be sufficiently challenging for 5-6 year old children. The item analysis offered in the Results section can serve as the basis of planning specific activities to increase the skills of five and six year olds in the use of comparative concepts (size, quantity and seriation), the naming of seasons, their ability to express concepts verbally, and their familiarity with a wider range of objects.

The comparisons between Project children and summer Head Start children do support the assumption that a full-year Head Start program, even one which does not incorporate a structured academic curriculum, is superior to a six to eight week experience, especially in terms of increasing a child's rapport with an adult, willingness to verbalize and ability to understand and carry out instructions. The lack of significant differences on other Preschool Inventory subtests merely points out the fact that both the summer and full-year Head Start programs involved in this study do not incorporate instruction in specific academic skills assessed by the Preschool Inventory.

It is interesting to see that the middle class preschool sample selected for this study, even though its roots are in eastern Kentucky rather than in urban areas, is markedly superior on all subtests of the Preschool Inventory when compared to disadvantaged children in eastern Kentucky Head Start programs. This suggests that there is a wide range of functioning among children in eastern Kentucky related to family background and type of preschool program available. Such a finding underscores the importance of finding more effective ways to provide training to Head Start personnel in these areas if they are to implement effective child development programs. It cannot be assumed, even in rural eastern Kentucky, that Head Start, by merely "existing" in a local community is necessarily providing the highest quality of early childhood development program possible in these areas.

RECOMMENDATIONS: A FOCUSSED SERVICES MODEL

The five-year existence of a Head Start program in ten eastern Kentucky counties staffed by nonprofessionals who provide numerous services is indeed a great tribute to everyone involved in the Rural Child Care Project. Considering the overwhelming problems faced by its staff in combating rural isolation, inadequate roads, extreme weather, limited funds and red tape, it may seem too much to ask that the basic program model of the Project be examined in terms of the demands of the 1970's and accumulating knowledge about preschool programs. However, failure to examine what the Project is achieving and what is expected of it by agencies increasingly concerned with Appalachian problems would guarantee its premature and undeserved end. The Rural Child Care Project should be in a position to demonstrate that after five years of existence it has an effective approach to intervention with rural families which can affect national policies and serve as a model for other programs. However, certain issues regarding program and staff have to be resolved before the Rural Child Care Project can operate as an effective program model.

Although the Rural Child Care Project has achieved an impressive total operation, it appears that some of the basic structure which enabled this operation to get off of the ground needs restructuring in order to support continuing development of Project staff. During the last year many efforts have been made within the Project itself to determine how such changes might be accomplished. At the same time, the program evaluation reported here was undertaken by the Kentucky Child Welfare Research Foundation Research Division. It appears at this point in time that these efforts need to be joined within a common framework which can preserve what has been accomplished and bring about necessary and desired changes to insure the Project's continuing effectiveness. In an effort to provide that framework, a new program model is proposed. An outline for the development of program variations based upon this new program model is presented in Appendix U .

Limitations of the Present "Parallel Services" Model

The Rural Child Care Project is unique among Head Start Programs not only because of its extensive use of nonprofessionals in an isolated rural area but because it offers a social service and homemaking program in addition to the typical child development program. An examination of the service delivery model utilized by the Project reveals that these services are provided to children and their families in an essentially parallel fashion (see Figure 1). That is, the child development center staff provides activities for the child within the center while Social Workers and Homemakers provide activities for parents (primarily mothers) within home or group settings. It is not clear how these two basic service programs interact to contribute more to the improvement of the family than either service contributes separately. Nor have previous formal evaluations shown that these services actually bring about short or long range increases in family adequacy which could not be achieved by other agencies in the area.

Another problem which occurs within the present model is the tendency to concentrate upon administration of staff and centers rather than upon the development of clear program objectives and supervision of staff effort toward meeting these objectives. This problem arises in part from the large administrative demands of the program which make it difficult to provide much individual supervision of service efforts. In-depth training of Homemakers and Project Teachers (who do not have previous professional training) has been provided on a spotty in-service basis by a single Regional Training Officer, a few consultants within a concentrated period of time with little follow-up, and by the Research Director and a DARCEE consultant on an extremely limited basis during the last program year.

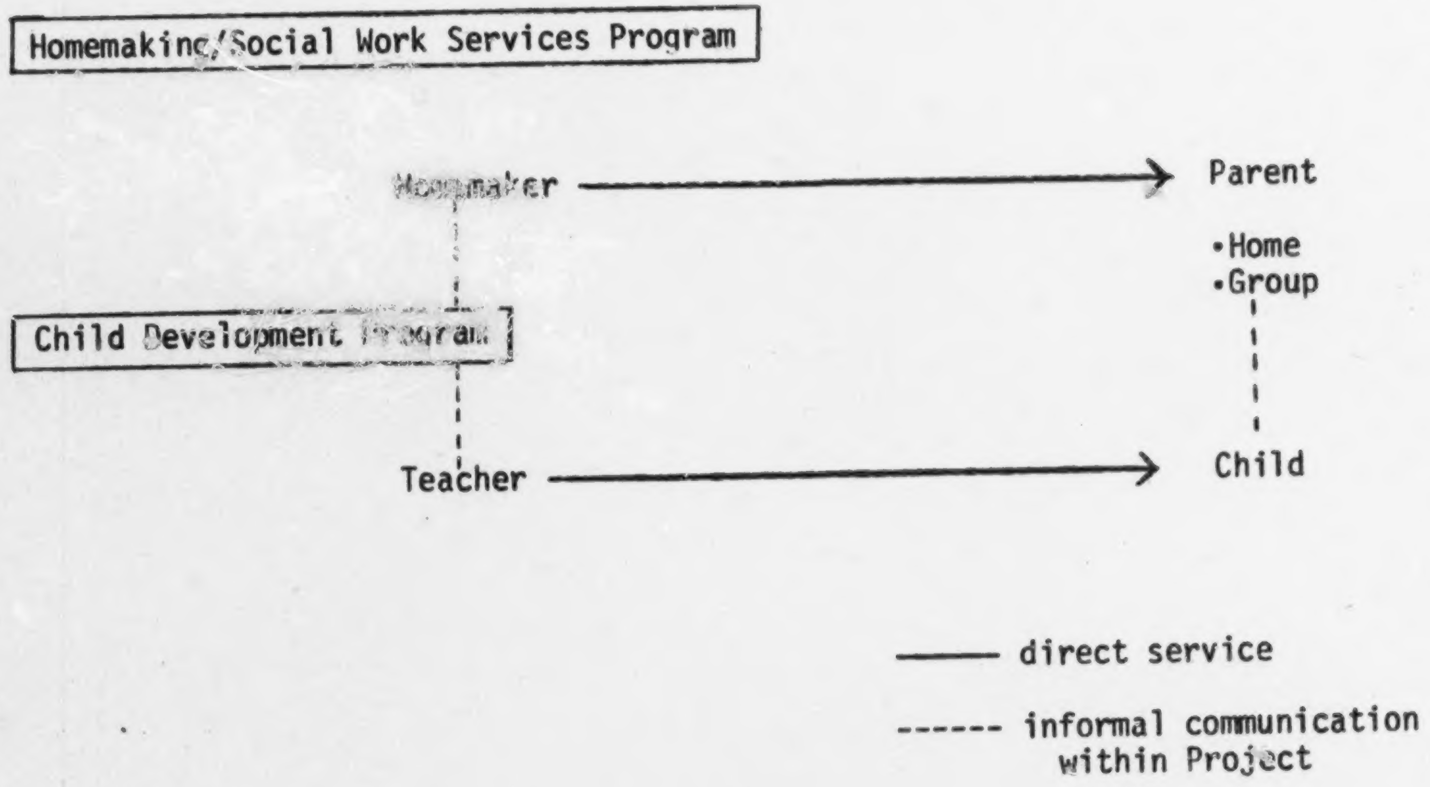
The most critical factor which has led to a focus upon operational problems instead of service implementation is the lack of clearly defined objectives in the child development and social services programs. Clearly defined objectives make it possible to evaluate staff effort in terms of the progress of participants. Objectives stated in behavioral terms or as accomplishments ("Each child will learn to name and describe the roles of family members common to rural areas") are specific and open to evaluation, whereas general statements of purpose ("The Rural Child Care Project utilizes a socialization model") are not.

Therefore, despite the considerable accomplishment of keeping the Project operating, it appears to be moving away from the kind of staff implementation model (see Literature Review) which makes the difference between success and nonsuccess in Head Start programs. Too much energy is consumed in administrative concerns; too little time is spent in planning as teams what is to be done with children and families and evaluating whether these specific program goals are being met or need to be modified.

Advantages of A Focussed Services Model

In order to capitalize upon the unique aspect of the Rural Child Care Project, namely its provision of social work and homemaking services in addition to child development services, it is proposed that program, training and supervision efforts operate within a "focussed services"

FIGURE 1: PARALLEL SERVICES MODEL


Homemaking/Social Work Services Program
Homemaker
Parent
•Home
•Group
Child Development Program
Teacher
Child
direct service
informal communication within Project

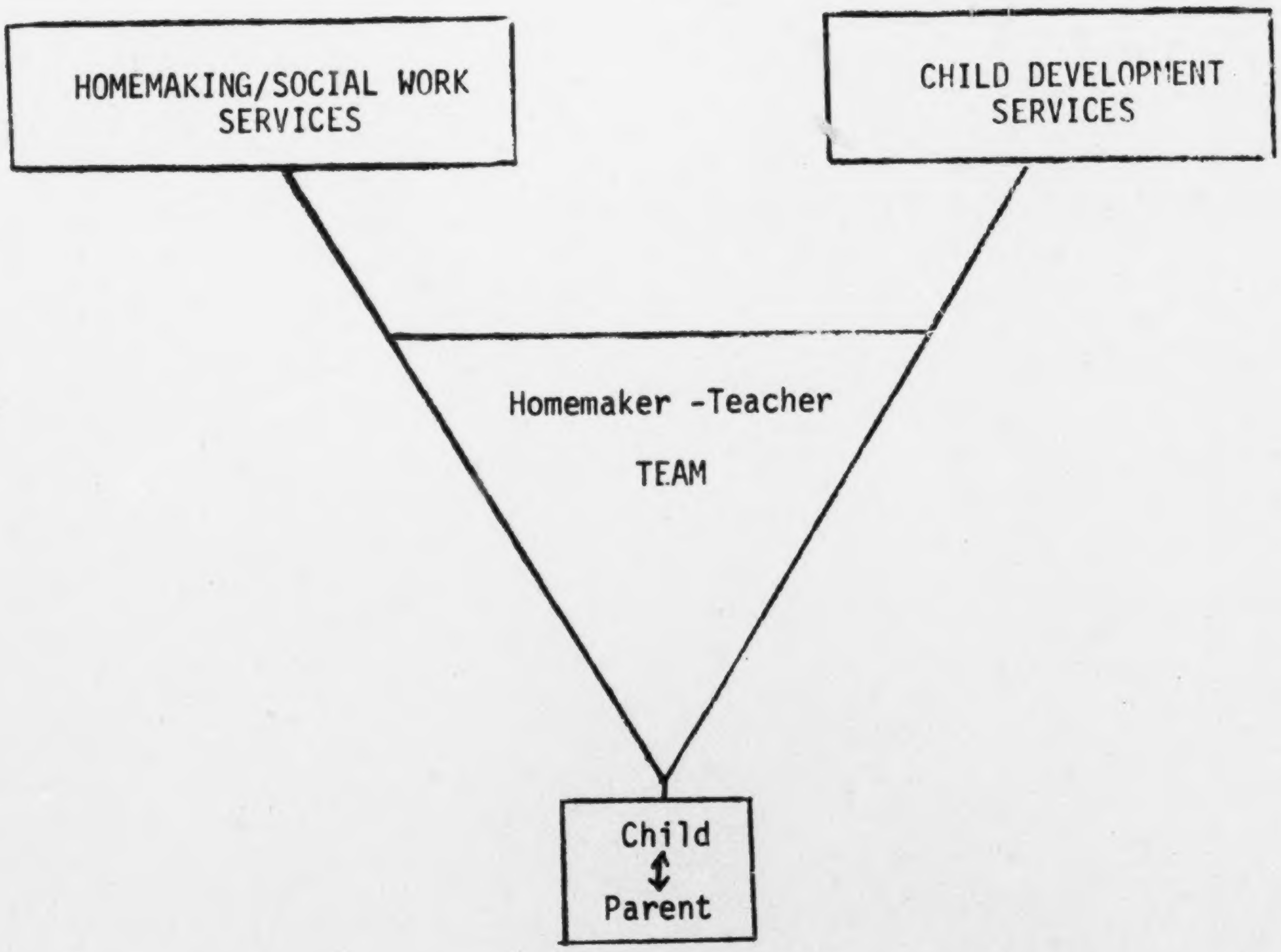
model rather than a parallel services model. Figure 2 illustrates this model schematically.

Underlying this model is the assumption that parents will be increasingly receptive to changing self-defeating patterns of behavior as they see positive changes in their children which in turn are linked to parent effort. In other words, the most effective way to change an adult is through helping the parent "change" his or her child. Correspondingly, the best way to insure that changes in a child brought about by Head Start will be sustained is to involve parents directly in making those changes. In this way parents can learn to support and encourage the development of intellectual and social skills in their children.

Based upon research findings, the DARCEE program and the experience of the Mother Training Project, the focussed services model outlines specifically how to make the above assumptions work. After the child is enrolled in a center, the Teacher brings the child home one-half day a week in order to work with the mother and child in activities based upon the center curriculum. The purpose of these visits is twofold: First, the Teacher plans the activity to demonstrate those things that the child does well to foster pride in the parent. Second, she includes activities which will help the child develop skills where he is weak. Thus the mother is shown that she is indeed her child's teacher and that many of his new skills will be acquired as a result of her efforts. Accompanying the Teacher on her visits is the Homemaker assigned to this family. She fulfills several functions. Initially she may help keep the situation under control by tending to other children while the Teacher, mother, and child are working together. More importantly, she and the Teacher work as a team so that as the mother becomes involved in the educational process of her child the content of some activities can be planned to provide the mother with greater homemaking skill. For example, if meal planning is a problem in the family, the Teacher and Homemaker together plan mother-child activities which focus on food groups, the importance of nutrition, how to set the table, the meals of the day, and so on. Since the child is the focus of the activity, the mother benefits from the activity content without being made to feel that she is an inferior meal planner. Her child's interest in these areas will motivate her to create nutritious meals in order to continue these activities at home.

For important reasons the focussed services model assumes that the young child is the proper focus of the entire Head Start program. "Change" is usually rapid and positive for the 4-6 year old child, almost in spite of his surroundings. As change occurs in the child's skills, the trained worker can readily involve the parent in these changes and help him or her feel competent as a teacher of the child. As a final step, the parent becomes motivated to adopt new skills as a result of seeing their importance to the well being of the child.

FIGURE 2: FOCUSSED SERVICES MODEL (Proposed)


HOMEMAKING/SOCIAL WORK SERVICES
CHILD DEVELOPMENT SERVICES
Homemaker -Teacher
TEAM
Child
Parent

Of course, it is assumed that in both the child development and homemaking/social work programs, the most effective efforts will result only if objectives are carefully specified and there is ample time for planning and evaluation.

It should be noted that no assumptions are made in this program model about the type of curriculum offered in a Project child development center.[1] The present unit-based Project program, as long as it is structured in terms of the worker's objectives opportunities to plan and to be evaluated, should be as successful as any other model. However, the process of specifying current program objectives and structuring what the staff do in terms of these objectives is a critical prerequisite for implementing the focussed services model effectively within the present program.

The focussed services model can be used in group settings as well as homes. The focussed services approach can involve those parents who are ready to help themselves in the process of reaching less adequate parents. Utilization of this model can contribute to more effective functioning of the Policy Advisory Committee and to the goal of filling staff vacancies with parents who have been trained to work with children.

Finally, utilizing the focussed services model should contribute to the development of a child development program which is stimulating for the full two year period a given child may be enrolled and which involves parents, through focussed social work, homemaking, and child development services, much more actively in creating better lives for their young families.

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[1] It should also be understood that this model does not alter the essential function of the Homemaker. It does not change the fact that the mother may work with the Homemaker alone or in parent groups on homemaking projects. It does mean that the focus of as many homemaking activities as possible should be the active involvement of mother *and* child. It also means that the best approach to upgrading a mother as homemaker is through activities in which she is teaching her child new skills.

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APPENDIX A

Hypothesis 1b-1c:
Valett's Categories for Stanford-Binet Items[1]
Including Notation of Items Included in More than One Category

Copyrighted Material Deleted

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[1] Valett, R. E. A profile for the Stanford Binet (L-M). Consulting Psychologists Press, Inc., 577 College Avenue, Palo Alto, California 94304. Copyright, 1965.

APPENDIX B

Hypothesis 3:
Community and School Involvement Interview

Name: ______________________ M ________ F ________

Interviewer: ______________________ County: ______________

Date: ______________

COMMUNITY AND SCHOOL INVOLVEMENT INTERVIEW

INTERVIEWER: Mrs. (Mr.) ____________, my name is ____________. I'm from the Rural Child Care office in Frankfort. We're interested in your opinion about the Rural Child Care Project and your opinion about some of the things in your community. You should find our talk interesting because it involves you and your family. This is not a test and there are no right or wrong answers.

Mrs. (Mr.) ____________ the first part of the interview concerns resources (or things) that are available in this community.

1. If someone in the community ran out of food and didn't have the money to buy any, where could they go to get some food?

   ____

   ____

   A. When did you first learn about this service? ______________

   B. Who told you? ______________________________

   C. Have you or your family ever used this service? YES____ NO____

   IF YES, how often (how many times)? ______________

2. If someone in a family got sick and they didn't have any money, where could they go to see a doctor without any cost to them?

   ____

   ____

   A. When did you first learn about this service? ______________

   B. Who told you? ______________________________

   C. Have you or your family ever used this service? YES____ NO____

   IF YES, how often (how many times)? ______________

3. If someone in this community needed clothing and they couldn't afford to buy any, where could they go to get the clothing without any cost to them?

____

____

A. When did you first learn about this service? ____________

B. Who told you? ______________________________

C. Have you or your family ever used this service? YES ____ NO____

IF YES, how often (how many times)? ________________

4. If a family needed work done on their house and they didn't have any money, where could they go to get someone to do the work without any cost to them?

____

____

A. When did you first learn about this service? ____________

B. Who told you? ______________________________

C. Have you or your family ever used this service? YES ____ NO____

IF YES, how often (how many time)? ________________

5. If you could go back to school without any worries about money, how far would you like to go?

Some High School ________ Some College ________ Other ________

High School Degree _______ College Degree _______ Vocational School _______

A. How far did you go in school? ____________________

B. (IF SUBJECT DIDN'T FINISH HIGH SCHOOL ASK) Did you receive the General Equivilency Degree (GED)?

YES_____ NO_____ WHEN? ______________________________

6. If someone in the community wanted to get some more education or training, where could they go to get it?

____

____

A. Have you or your family ever used any of these services?

YES_____ Which family member? ______________________ NO____

IF YES, when? ______________________________

B. When did you (husband/wife) first learn about this service?

____

C. How did you (husband/wife) find out about it?

____

D. Have you (husband/wife) received any more education or vocational training since you enrolled in the RCCP? YES_____ NO_____

What kind? ______________________________

When did you receive it? ______________________________

7. If (Child's Name) could go as far in school as he (she) wanted to, how far would you want him (her) to go?

Some High School	_________	Some College	_________	Other	________
High School Degree	_______	College Degree	_______	Vocational School	_______

Mrs. (Mr.) ______________ let's think about your community and the kinds of meetings that are held in your community.

8. In most communities the Parent Teacher Association at the school holds meetings every month. Does the PTA hold meetings in this community?

Yes_____ NO_____ DK_____

A. How did you find out about them? ____________________________

B. What are the purposes of the PTA meetings? ____________________

____

C. Have you (husband/wife) ever been to any of them? YES___ NO___

IF YES, when? ____________________ How often? __________

How do you get to these meetings? ____________________

D. Why (do) (don't) you attend? ____________________

9. In most communities there are Community Action Programs. Is there a CAP in this community?

YES_____ NO_____ DK_____

A. What are the purposes of the Community Action Programs?

____

B. How did you find out about them? ____________________

C. Have you (husband/wife) ever been to any of their meetings?

YES_____ NO_____

IF YES, when did you last attend? ____________________

How do you get to these meetings? ____________________

D. Why (do) (don't) you attend them? ____________________

10. Does the Rural Child Care Project (Day Care Program) hold meetings for the parents involved with the project?

YES_____ NO_____ DK_____

A. What is the purpose of these meetings? ____________________

____

B. How did you find out about them? ____________________

C. Have you been able to attend any of their meetings? YES___ NO___

IF YES, how do you get to these meetings? ____________________

How often do you attend? ____________________

D. Why (do) (don't) you attend these meetings? ________________

____

E. What do you think is the purpose of the Rural Child Care Project?

For children? ________________

____

For parents/families? ________________

____

Mrs. (Mr.) ____________ in most communities there are always places that have the best quality goods for sale at a lower price.

11. Where in your community can you buy the best quality food (groceries) at the lowest price?

____

A. Do you buy your food there? YES____ NO____

B. IF NO, why not? ________________

C. IF YES, when did you start buying your food there? ________

____

D. How did you decide this was the best place? (Prices, etc.)

____

12. Where in your community can you buy the best quality clothing at the lowest price?

____

A. Do you buy your clothing there? YES____ NO____

B. IF NO, why not? ________________

C. IF YES, when did you start buying your clothing there? ______

____

D. How did you decide this was the best place? (Prices, etc.)

____

13. Where in your community can your husband (or you) buy the best quality tools and hardware at the lowest price?

____

A. Does your husband (do you) buy his (your) tools and hardware there?

YES_____ NO_____

B. IF NO, why not? ________________________________

C. IF YES, when did he (you) start buying his (your) tools and hardware there?

____

D. How did he (you) decide this was the best place? (Prices, etc.)

____

Thank you, Mrs. (Mr.) ______________, for talking with me today. I have enjoyed getting to know you. We really appreciate your help in our Project.

APPENDIX C

Hypothesis 3:
Summary of Results For
"The Community and School Involvement Interview"

Hypothesis 3:
COMMUNITY AND SCHOOL INVOLVEMENT INTERVIEW (CSII) - Total Sample
(N=81)

Item 1: "If someone in the community ran out of food and didn't have the money to buy any, where could they go to get some food?"

Category	Frequency	Per Cent
Welfare Office, Food Stamps, Public Assistance, Community Action Agencies, County Judges, Emergency Fund	52	64.19
Don't Know	15	18.51
Other volunteer groups (Red Cross and Salvation Army)	4	4.93
Respondent's relative and neighbors	4	4.93
None	4	4.93
Church groups	1	1.23
Rural Child Care Project	1	1.23

"Correct answer for County?"

Category	Frequency	Per Cent
Correct	56	69.13
Doesn't apply	20	24.69
Incorrect	5	6.17

"When did you first learn about this service?"

Category	Frequency	Per Cent
Before entering Project	37	45.67
No Data	24	29.62
After entering Project	18	22.22
Don't Know	2	2.46

"Who told you?"

Category	Frequency	Per Cent
No Data	24	29.62
Neighbor or relative	21	25.92

Category	Frequency	Per Cent
Other Social Service Agency	14	17.28
General knowledge	9	11.11
Don't Know	6	7.40
News Agency	4	4.93
RCCP Personnel	3	3.70

"Have you or your family ever used this service? How often?"

Category	Frequency	Per Cent
No	24	29.62
No Data	23	28.39
Yes - 5 or less (seldom)	20	24.69
Yes - 10 to 20 times (frequently) (monthly)	12	14.81
Yes - 5 to 10 times (occasionally)	2	2.46

Item 2: "If someone in a family got sick and they didn't have any money, where could they go to see a doctor without any cost to them?"

Category	Frequency	Per Cent
Welfare Office, Food Stamps, Public Assistance, Community Action Agencies, County Judges, Emergency Fund	55	67.90
None	11	13.58
Don't Know	11	13.58
Church groups	1	1.23
Other volunteer groups (Red Cross and Salvation Army)	1	1.23
Respondent's relative and neighbors	1	1.23
Rural Child Care Project	1	1.23

"Correct answer for County?"

Category	Frequency	Per Cent
Correct	57	70.37
Doesn't apply	17	20.98
Incorrect	7	8.64

Hypothesis 3: (CSII) - Total Sample, Page 3

"When did you first learn about this service?"

Category	Frequency	Per Cent
Before entering Project	46	56.79
No Data	23	28.39
After entering Project	11	13.58
Don't Know	1	1.23

"Who told you?"

Category	Frequency	Per Cent
No Data	24	29.62
Other Social Service Agency	21	25.92
Neighbor or relative	12	14.81
Don't Know	11	13.58
RCCP Personnel	6	7.40
General knowledge	4	4.93
News Agency	3	3.70

"Have you or your family ever used this service? How often?"

Category	Frequency	Per Cent
No Data	22	27.16
Yes - 10 to 20 times (frequently) (monthly)	20	24.69
Yes - 5 or less (seldom)	18	22.22
No	15	18.51
Yes - 5 to 10 times (occasionally)	6	7.40

Item 3: "If someone in this community needed clothing and they couldn't afford to buy any, where could they go to get the clothing without any cost to them?"

Category	Frequency	Per Cent
Rural Child Care Project	19	23.45
Other volunteer groups (Red Cross and Salvation Army)	18	22.22
Don't Know	18	22.22

Hypothesis 3: (CSII) - Total Sample, Page 4

Category	Frequency	Per Cent
Welfare Office, Food Stamps, Public Assistance, Community Action Agencies, County Judges, Emergency Fund	15	18.51
Church groups	7	8.64
None	2	2.46
Respondent's relative and neighbors	1	1.23
No Data	1	1.23

"Correct answer for County?"

Category	Frequency	Per Cent
Correct	58	71.60
Doesn't apply	19	23.45
Incorrect	3	3.70
No Data	1	1.23

"When did you first learn about this service?"

Category	Frequency	Per Cent
Before entering Project	29	35.80
After entering Project	27	33.33
No Data	24	29.62
Don't Know	1	1.23

"Who told you?"

Category	Frequency	Per Cent
No Data	24	29.62
RCCP Personnel	23	28.39
Neighbor or relative	12	14.81
Other Social Service Agency	7	8.64
Don't Know	7	8.64
General knowledge	6	7.40
News Agency	2	2.46

Hypothesis 3: (CSII) - Total Sample, Page 5

"Have you or your family ever used this service? How often?"

Category	Frequency	Per Cent
Yes - 5 or less (seldom)	25	30.86
No	25	30.86
No Data	24	29.62
Yes - 10 to 20 times (frequently) (monthly)	5	6.17
Yes - 5 to 10 times (occasionally)	2	2.46

Item 4: "If a family needed work done on their house and they didn't have any money, where could they go to get someone to do the work without any cost to them?"

Category	Frequency	Per Cent
Don't Know	35	43.20
Welfare Office, Food Stamps, Public Assistance, Community Action Agencies, County Judges, Emergency Fund	34	41.97
None	6	7.40
Church groups	2	2.46
Other volunteer groups (Red Cross and Salvation Army)	2	2.46
Rural Child Care Project	1	1.23
No Data	1	1.23

"Correct answer for County?"

Category	Frequency	Per Cent
Correct	39	48.14
Doesn't apply	37	45.67
Incorrect	5	6.17

Hypothesis 3: (CSII) - Total Sample, Page 6

"When did you first learn about this service?"

Category	Frequency	Per Cent
Before entering Project	26	32.09
No Data	26	32.09
Don't Know	16	19.75
After entering Project	13	16.04

"Who told you?"

Category	Frequency	Per Cent
No Data	42	51.85
Neighbor or relative	16	19.75
Other Social Service Agency	14	17.28
News Agency	3	3.70
RCCP Personnel	2	2.46
General knowledge	2	2.46
Don't Know	2	2.46

"Have you or your family ever used this service? How often?"

Category	Frequency	Per Cent
No Data	40	49.38
No	31	38.27
Yes - 5 or less (seldom)	10	12.34

Item 5: "If you could go back to school without any worries about money, how far would you like to go?"

Category	Frequency	Per Cent
College degree	36	44.44
High School degree	30	37.03
Some High School	4	4.93
Some College	3	3.70
No aspiration	3	3.70
Grade School	2	2.46
Graduate or Professional Degree	2	2.46
Vocational School	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 7

"How far did you go in school?"

Category	Frequency	Per Cent
4 to 8 years completed	48	59.25
3 or less years	10	12.34
12 years completed	7	8.64
9 years completed	6	7.40
11 years completed	5	6.17
30 hours or less of college	2	2.46
30 hours or more of college	2	2.46
10 years completed	1	1.23

"Did you receive the General Equivalency Degree (GED)? When?"

Category	Frequency	Per Cent
No	73	90.12
Not applicable	6	7.40
Yes, after entering Project	2	2.46

Item 6: "If someone in the community wanted to get some more education or training, where could they go to get it?"

Category	Frequency	Per Cent
Local High School, Local Grade School, Local Vocational School, CAA Night Classes, Board of Education	42	51.85
Don't Know	32	39.50
Don't Know: Ask RCCP or Welfare for referral	5	6.17
Government loan	1	1.23
Correspondent course	1	1.23

"Answer correct for County?"

Category	Frequency	Per Cent
Correct	46	56.79
Doesn't apply	33	40.74
Incorrect	2	2.46

Hypothesis 3: (CSII) - Total Sample, Page 8

"Have you or your family ever used any of these services? When?"

Category	Frequency	Per Cent
No	39	48.14
No Data	29	35.80
Yes, mother, after entering Project	4	4.93
Yes, father, before entering Project	2	2.46
Yes, father, after entering Project	2	2.46
Yes, mother, before entering Project	2	2.46
Yes, child, before entering Project	2	2.46
Yes, child, after entering Project	1	1.23

"When did you first learn about this service?"

Category	Frequency	Per Cent
No Data	34	41.97
Before entering Project	28	34.56
After entering Project	16	19.75
Don't Know	3	3.70

"How did you find out about it?"

Category	Frequency	Per Cent
No Data	35	43.20
Neighbor or relative	22	27.16
Other Social Service Agency Personnel (CAP)	10	12.34
RCCP Personnel	6	7.40
Don't Know	4	4.93
News Agency	2	2.46
Heard about it (non-specific)	2	2.46

Hypothesis 3: (CSII) - Total Sample, Page 9

"Have you (husband/wife) received any more education or vocational training since you enrolled in the RCCP?" What kind?"

Category	Frequency	Per Cent
No	60	74.07
No Data	7	8.64
Yes, wife, regular school	6	7.40
Yes, husband, Vocational School	4	4.93
Yes, husband, regular school	3	3.70
Yes, wife, Vocational School	1	1.23

Item 7: "If your child could go as far in school as he (she) wanted to, how far would you want him (her) to go?"

Category	Frequency	Per Cent
College Degree	71	87.65
High School Degree	6	7.40
Graduate or Professional Degree	2	2.46
Some High School	1	1.23
Some College	1	1.23

Item 8: "In most communities the Parent Teacher Association at the school holds meetings every month. Does the PTA hold meetings in this community?"

Category	Frequency	Per Cent
Yes	54	66.66
Don't Know	16	19.75
No	10	12.34
Vague/unscorable/obviously incorrect	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 10

"Answer correct for County?"

Category	Frequency	Per Cent
Correct	54	66.66
Doesn't apply	16	19.75
Incorrect	11	13.58

"How did you find out about them?"

Category	Frequency	Per Cent
No Data	27	33.33
Notices brought from school	22	27.16
General knowledge	9	11.11
Neighbor or relative	7	8.64
News Agency	6	7.40
RCCP Personnel	5	6.17
Don't Know	4	4.93
Other Social Service Agency Personnel (CAP)	1	1.23

"What are the purposes of the PTA meetings?"

Category	Frequency	Per Cent
No Data	25	30.86
Don't know	20	24.69
Some positive feeling expressed without emphasis on who benefits	16	19.75
Positive answer aimed at children's benefit	7	8.64
Positive answer aimed at schools' benefit	7	8.64
Positive answer aimed at parents' benefit	5	6.17
Negative answer	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 11

"Have you (husband/wife) ever been to any of them? When?"

Category	Frequency	Per Cent
No	38	46.91
No Data	26	32.09
Yes, wife, before entering Project	6	7.40
Yes, wife, after entering Project	5	6.17
Yes, husband, after entering Project	4	4.93
Yes, husband, before entering Project	2	2.46

"How often?"

Category	Frequency	Per Cent
No Data	64	79.01
Regularly	6	7.40
No more than one time	6	7.40
Occasionally	5	6.17

"How do you get to these meetings?"

Category	Frequency	Per Cent
No Data	65	80.24
Drive self	7	8.64
RCCP Personnel drives	4	4.93
Other Social Service Agency Personnel drives	2	2.46
Neighbor or relative drives	1	1.23
Public transportation	1	1.23
Don't Know	1	1.23

"Why *do* you attend?"

Category	Frequency	Per Cent
No Data	68	83.95
Interested in the school and child's welfare	7	8.64
Interesting	3	3.70

Hypothesis 3: (CSII) - Total Sample, Page 12

Category	Frequency	Per Cent
Curiosity	1	1.23
Someone else requested it	1	1.23
To help PTA raise money	1	1.23

"Why don't you attend?"

Category	Frequency	Per Cent
No Data	45	55.55
Not involved	11	13.58
Meeting time problem (work, home schedule)	9	11.11
Transportation problem	7	8.64
Never been told when or where to meet. Not invited	6	7.40
Don't Know	3	3.70

Item 9: "In most communities there are Community Action Programs. Is there a CAP in this community?"

Category	Frequency	Per Cent
Yes	38	46.91
Don't Know	30	37.03
No	13	16.04

"Answer correct for County?"

Category	Frequency	Per Cent
Correct	38	46.91
Doesn't apply	29	35.80
Incorrect	13	16.04
No Data	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 13

"What are the purposes of the Community Action Programs?"

Category	Frequency	Per Cent
No Data	43	53.08
Benefits Community	27	33.33
Gives one specific benefit	6	7.40
Gives more than one specific benefit	4	4.93
Don't Know	1	1.23

"How did you find out about them?"

Category	Frequency	Per Cent
No Data	44	54.32
Neighbor or relative	12	14.81
CAP Personnel	9	11.11
General knowledge	6	7.40
RCCP Personnel	5	6.17
News Agency	4	4.93
Don't Know	1	1.23

"Have you (husband/wife) ever been to any of their meetings? When?"

Category	Frequency	Per Cent
No Data	43	53.08
No	24	29.62
Yes, husband, after entering Project	8	9.87
Yes, husband, before entering Project	3	3.70
Yes, wife, after entering Project	2	2.46
Yes, wife, before entering Project	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 14

"How do you get to these meetings?"

Category	Frequency	Per Cent
No Data	67	82.71
Drive self	12	14.81
RCCP Personnel drives	1	1.23
Neighbor or relative drives	1	1.23

"Why do you attend?"

Category	Frequency	Per Cent
No Data	67	82.71
Interesting	9	11.11
Someone else requested it	3	3.70
Interested in community improvement	2	2.46

"Why don't you attend?"

Category	Frequency	Per Cent
No Data	59	72.83
Meeting time problem (work, home schedule)	6	7.40
Not involved	4	4.93
Never been told when or where to meet. Not invited	4	4.93
Not interested	3	3.70
Transportation problem	3	3.70
Don't Know	2	2.46

Item 10: "Does the Rural Child Care Project (Day Care Program) hold meetings for the parents involved with the project?"

Category	Frequency	Per Cent
Yes	75	92.59
Don't Know	3	3.70
Vague/unscorable/obviously incorrect	2	2.46
No	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 15

"Answer correct for County?"

Category	Frequency	Per Cent
Correct	75	92.59
Doesn't apply	4	4.93
Incorrect	2	2.46

"What is the purpose of these meetings?"

Category	Frequency	Per Cent
Some positive feeling expressed without emphasis as to who benefits	26	32.09
A positive answer aimed toward parents' benefit	20	24.69
Don't Know	19	23.45
A positive answer aimed toward the children	10	12.34
No Data	5	6.17
A negative answer expressed toward the Project.	1	1.23

"How did you find out about them?"

Category	Frequency	Per Cent
RCCP Personnel	69	85.18
Neighbor or relative	4	4.93
No Data	4	4.93
General knowledge	2	2.46
News Agency	1	1.23
Don't Know	1	1.23

"Have you been able to attend any of their meetings?"

Category	Frequency	Per Cent
Yes	47	58.02
No	30	37.03
No Data	4	4.93

Hypothesis 3: (CSII) - Total Sample, Page 16

"How do you get to these meetings?"

Category	Frequency	Per Cent
No Data	36	44.44
RCCP Personnel drives	31	38.27
Drive self	13	16.04
Other Social Service Agency Personnel drives	1	1.23

"How often do you attend?"

Category	Frequency	Per Cent
No Data	36	44.44
Regularly	30	37.03
Occasionally	10	12.34
No more than one time	5	6.17

"Why *do* you attend?"

Category	Frequency	Per Cent
No Data	38	46.91
Interested in the Center and child's welfare	21	25.92
Interesting	13	16.04
Curiousity	4	4.93
Not applicable	4	4.93
Someone else requested it	1	1.23

"Why *don't* you attend?"

Category	Frequency	Per Cent
No Data	49	60.49
Meeting time problem (work, home schedule)	23	28.39
Transportation problem	4	4.93
Not interested	2	2.46
Not involved	2	2.46
Never been told when or where to meet. Not invited	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 17

"What do you think is the purpose of the Rural Child Care Project for children?"

Category	Frequency	Per Cent
Educational aspects	35	43.20
Social aspects	24	29.62
Favorable comment but no specific purpose	17	20.98
Don't Know	2	2.46
No Data	2	2.46
Medical Care reasons	1	1.23

"What do you think is the purpose of the Rural Child Care Project for parents/families?"

Category	Frequency	Per Cent
Babysitting service	16	19.75
Don't Know	15	18.51
Favorable comment - vague	14	17.28
Learning experience	13	16.04
Inappropriate response	7	8.64
Social and Medical services for parents	7	8.64
No Data	4	4.93
No purpose for parents	2	2.46
Counseling for parents	2	2.46
Unfavorable comment	1	1.23

Item 11: "Where in your community can you buy the best quality food (groceries) at the lowest price?"

Category	Frequency	Per Cent
Knows of a place	71	87.65
Doesn't know of a place	8	9.87
Vague answer	1	1.23
No Data	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 18

"Do you buy your food there? (IF NO: Why not?) (IF YES: When did you start?)"

Category	Frequency	Per Cent
Yes, before entering Project	56	69.13
No Data	8	9.87
Yes, after entering Project	6	7.40
No, transportation problem	4	4.93
Yes, don't know	3	3.70
No, habit, tradition and personal reasons	2	2.46
No, credit reasons	1	1.23
No, no reason given	1	1.23

"How did you decide this was the best place? (Prices, etc.)"

Category	Frequency	Per Cent
Prices, quality with no explanation how	37	45.67
Comparative shopping on prices, quality, etc.	15	18.51
No Data	12	14.81
Convenience	5	6.17
Credit reasons	4	4.93
Tradition, habit	4	4.93
Personal reasons	4	4.93

Item 12: "Where in your community can you buy the best quality clothing at the lowest price?"

Category	Frequency	Per Cent
Knows of a place	66	81.48
Don't Know	13	16.04
Vague answer	2	2.46

Hypothesis 3: (CSII) - Total Sample, Page 19

"Do you buy your clothing there? (IF NO: Why not?) (IF YES: When did you start?)"

Category	Frequency	Per Cent
Yes, before entering Project	55	67.90
No Data	14	17.28
Yes, after entering Project	4	4.93
No, credit reasons	3	3.70
No, not convenient	2	2.46
Yes, don't know	1	1.23
No, habit, tradition and personal reasons	1	1.23
No, no reason given	1	1.23

"How did you decide this was the best place? (Prices, etc.)"

Category	Frequency	Per Cent
Prices, quality with no explanation how	38	46.91
No Data	17	20.98
Comparative shopping on prices, quality, etc.	14	17.28
Personal reasons	5	6.17
Credit reasons	3	3.70
Tradition, habit	3	3.70
Don't Know	1	1.23

Item 13: "Where in your community can your husband (or you) buy the best quality tools and hardware at the lowest price?"

Category	Frequency	Per Cent
Knows of a place	60	74.07
Don't Know	20	24.69
No Data	1	1.23

Hypothesis 3: (CSII) - Total Sample, Page 20

"Does your husband (do you) buy his (your) tools and hardware there? (IF NO: Why not?) (IF YES: When did he (you) start?)"

Category	Frequency	Per Cent
Yes, before entering Project	52	64.19
No Data	21	25.92
Yes, after entering Project	4	4.93
No, habit, tradition, personal reasons	2	2.46
Yes, don't know	1	1.23
No, no reason given	1	1.23

"How did he (you) decide this was the best place? (Prices, etc.)"

Category	Frequency	Per Cent
Prices, quality with no explanation how	25	30.86
No Data	22	27.16
Don't Know	9	11.11
Comparative shopping on prices, quality, etc.	6	7.40
Tradition, habit	6	7.40
Convenience	5	6.17
Personal reasons	5	6.17
Credit reasons	3	3.70

APPENDIX D

Hypothesis 5:
The Attitudes Interview[1]
Project and Middle Class Mothers Form
Project Teacher Form

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[1] Items 5 and 12-20 were adapted from the work of Hess _et al_ (1968).
(see bibliography p. 195 for complete citation)

TO BE TAPED

ATTITUDES INTERVIEW (PROJECT AND MIDDLE CLASS MOTHERS)

Project Mothers

INTERVIEWER: Mrs. __________, my name is __________. I'm from the Foundation's Research Office in Frankfort. We've asked you to talk to us because we feel that the more we know about the people and the area, the better the program can serve the children.* You should find our talk interesting because we're going to talk about (Name of Child). This is not a test and there are no right or wrong answers. We are interested only in how you feel about some things. Here's the first question:

Middle Class Mothers

INTERVIEWER: Mrs. __________, my name is __________. I'm from the Kentucky Child Welfare Research Foundation office in Frankfort. We have asked you to talk to us because we are interested in preschool programs for children in eastern Kentucky. We want to know more about how parents feel about these programs. You should find our talk interesting because we will be talking about (Name of Child). This is not a test and there are no right or wrong answers. We are interested only in how you feel about some things. Here's the first question:

1. Most mothers with small children have to spend some time teaching them new things. Think of something that you had to teach (Name) in the last few days and tell me how you did it.

   ____

   ____

2. Generally, when you have to teach something new to (Name) what things do you have to remember to say and do?

   ____

   ____

   Now (Name) is attending the Center (Nursery School or Kindergarten) it is a new experience for both of you, and I have some questions to ask you about it.

---

*Demonstrate and activate tape recorder. Pause to identify subject, interviewer, instrument and date before proceeding with introduction.

(PROJECT AND MIDDLE CLASS MOTHERS)
ATTITUDES INTERVIEW - PAGE TWO

3. What does (Name) do while he's at the Center (Nursery School or Kindergarten) that pleases you the most?

4. What does he do at the Center (Nursery School or Kindergarten) that (annoys) bothers you the most?

5.

a. In general, what do you think mothers should say and do to get their children ready to attend the Centers (Nursery School or Kindergarten)?

b. What should children be told about the teacher?

c. About the other children?

(PROJECT AND MIDDLE CLASS MOTHERS)
ATTITUDES INTERVIEW - PAGE THREE

6. When (Name) is ready to go to the first grade, how will you prepare him (her) for it?

____

____

7. Would you do anything different to prepare (Name) for public school than for the Center (Nursery School or Kindergarten)?

____

____

8. Have you been able to spend some time in the Centers (Nursery School or Kindergarten)?

YES _____ NO _____

IF YES: What kinds of things do the teachers do when they begin to teach something new to the children?

____

____

IF NO: What kinds of things do you think the teachers might do when they begin to teach something new to the children?

____

____

9. What do you like most about the way the children are taught (handled) in the Centers (Nursery School or Kindergarten)?

____

____

10. What do you dislike most about the way the children are taught (handled) in the Centers (Nursery School or Kindergarten)?

____

____

(PROJECT AND MIDDLE CLASS MOTHERS)
ATTITUDES INTERVIEW - PAGE FOUR

Mrs. _________ thinking about public school now,

11. What things can you think of that first, second, and third grade teachers do to help children learn new things?

____

____

(PROJECT AND MIDDLE CLASS MOTHERS)
ATTITUDES INTERVIEW - PAGE SIX

21. If you could go back to school without any worries about money, how far would you like to go?

Some High School ___________ Some College ___________ Other ____

High School Graduation ______ College Degree __________

How far did you go in school? ________________________________

22. If your child (Name) could go as far in school as he (she) wanted to, how far would you want him to go?

Some High School ___________ Some College ___________ Other ____

High School Graduation ______ College Degree __________

23. What do you think it would require (take) for (Name) to go that far?

____

____

24. How far do you think (Name) will really go?

	YES	NO
finish grade school?	_____	_____
finish high school?	_____	_____
attend college?	_____	_____
get a college degree?	_____	_____
get a graduate degree?	_____	_____

(PROJECT AND MIDDLE CLASS MOTHERS)

Before we finish this interview, Mrs. _________, I'd like to ask you a few more questions about yourself:

DESCRIPTIVE DATA FOR PROJECT MOTHERS (MIDDLE CLASS MOTHERS)

a. Child's Name ______________________________

b. Sex ______________________

c. Race ______________________

d. Group designation ______________________________

e. Welfare Status ______________________________

****

ASK:

1. How long have you lived in eastern Kentucky? ______________

2. When were you born? ______________________________

3. Where were you born? ______________________________

4. Do you work outside home? ______________________________

If yes, what is your occupation? ______________________

5. What is your marital status? ______________________

6. What is your husband's occupation? ______________________

7. How many of your children have had Day Care (Preschool or Kindergarten) experience? ______________________________

(If more than one) When did your first child start the program?

____

(For Project Mothers only) When did (Name) start the program?

____

Mother Interviewed ______________ Interviewer ______________

Center ______________________ Date ______________________

TO BE TAPED

ATTITUDES INTERVIEW (TEACHERS)

INTERVIEWER: Mrs. _________, my name is _________. I'm from the Foundation's Research Office in Frankfort. We've asked you to talk to us because we feel that the more we know abou the people and the area, the better the program can serve the children.* How old is your youngest child, Mrs. _________? What is his (her) name? (We would like you to think back to when _________ was 4-5 years old.) We want to talk to you as the mother of a preschool child, OK? This is not a test and there are no right or wrong answers. We are interested only in how you feel about some things. Here is the first question:

1. Most mothers with small children have to spend some time teaching them new things. Think of something that you had to teach (Name) in the last few days (when he (she) was 4 or 5) and tell me how you did it.

   ____

   ____

2. Generally, when you have (had) to teach somehing new to (Name) what things do (did) you have to remember to say and do?

   ____

   ____

   Tell me, Mrs. _________ does (did) _________ attend any pre-school or kindergarten type of program? _________

   If not, then say: Well then, Mrs. _________ I want you to pretend he (she) did and try to think how you would have done when I ask these next questions.

3. What does (did) (Name) do while he's at the Nursery School (Kindergarten) that pleases (pleased) you the most?

   ____

   ____

---

*Demonstrate and activate tape recorder. Pause to identify subject, interviewer, instrument and date before proceeding with introduction.

(TEACHERS)
ATTITUDES INTERVIEW - PAGE TWO

4. What does (did) he do at the Nursery School (Kindergarten) that bothers (annoys) (bothered, annoyed) you the most?

5. When you knew that (Name) was going to be attending a Nursery School (Kindergarten), what did you say (do) to get him (her) ready to go? (for the experience).

a. In general, what do you think mothers should say and do to get their children ready to attend Nursery School (Kindergarten)?

b. What should children be told about the teacher?

c. About the other children?

6. When (Name) is (was) ready to go to the first grade, how will (did) you prepare him (her) for it?

(TEACHERS)
ATTITUDES INTERVIEW - PAGE THREE

7. Would you do anything different to prepare (Name) for public school than for preschool (Kindergarten)?

____

____

8. What kinds of things do the teachers do when they begin to teach something new to the children?

____

____

9. As a mother as well as a teacher, what do you like most about the way the children are taught (handled) in the Centers?

____

____

10. What do you dislike most about the way the children are taught (handled) in the Centers?

____

____

Mrs. __________, thinking about public school now,

11. What things can you think of that first, second, and third grade teachers do to help children learn new things?

____

____

12. After (Name) goes (went) to school, what would you do (have done) if you found out he (she) was talking and cutting up in class when the teacher told the children to be quiet?

____

____

(TEACHERS)
ATTITUDES INTERVIEW - PAGE FOUR

13. What would you do (have done) if the teacher (scolded) got on (Name) in front of the class and sent him (her) to the principal's office for something he (she) didn't do?

____

____

14. What would you do (have done) if (Name) beat up another child at school who had done nothing to him (her)?

____

____

15. What would you do (have done) if (Name) was beat up by some other child at school when (Name) hadn't done anything to deserve it?

____

____

16. What would you do (have done) if (Name) wasn't doing his (her) work at school or his (her) homework that the teacher assigned?

____

____

17. What would you do (have done) if (Name) had some work that he (she) didn't understand how to do, or the teacher had not bothered to explain it?

____

____

18. What would you do (have done) if (Name) had to miss school and got behind the other children?

____

____

(TEACHERS)
ATTITUDES INTERVIEW - PAGE FIVE

19. What would you do (have done) (or say/said) if some morning (Name) said he (she) didn't want to go to school and you knew that he (she) wasn't sick and that there wasn't any reason that he shouldn't go?

____

____

20. Does (Name) have an older brother or sister? YES____ NO____

(IF NO: Let's pretend (Name) does have an older brother.) If (Name) wanted to play with his (her) older brother's (sister's) school books and you knew he would tear them up, how would you handle this situation. (What would you do?)

____

____

21. If you could go back to school without any worries about money, how far would you like to go?

Some High School __________ Some College __________ Other ______

High School Graduation ____ College Degree ________

How far did you go in school? ____________________________________

22. If your child (Name) could go as far in school as he (she) wanted to, how far would you want him to go?

Some High School __________ Some College __________ Other ______

High School Graduation ____ College Degree ________

23. What do you think it would require (take) for (Name) to go that far?

____

____

(TEACHERS)
ATTITUDES INTERVIEW - PAGE SIX

24. How far do you think (Name) will really go?	YES	NO
finish grade school?	______	______
finish high school?	______	______
attend college?	______	______
get a college degree?	______	______
get a graduate degree?	______	______

(TEACHERS)

Before we finish this interview, Mrs. _________, I'd like to ask you a few more questions about yourself:

DESCRIPTIVE DATA FOR TEACHERS

a. Child's Name ______________________________

b. Sex ______________

c. Race ______________

d. Group designation ______________________________

e. Welfare Status ______________________________

****

ASK:

1. How long have you lived in eastern Kentucky? ______________

2. When were you born? ______________________________

3. Where were you born? ______________________________

4. Do you work outside home? ______________________________

   If yes, what is your occupation? ______________________

5. What is your marital status? ______________________________

6. What is your husband's occupation? ______________________

7. How may of your children have had Day Care (preschool, kindergarten) experience? ______________________________

   (If more than one) When did your first child start the program?

   ____

8. How long have you taught in the Center? ______________

Teacher Interviewed ______________ Interviewer ______________

Center ______________________ Date ______________

APPENDIX E

Hypothesis 9:
CDC Teacher Interview
Attitudes Toward Project Volunteers
(Pretest and Post-Test Items)

CDC TEACHER INTERVIEW
ATTITUDES TOWARD PROJECT VOLUNTEERS

Interviewer:

Now before we finish, I have a few questions to ask you about Project mothers in general who come to the Centers as volunteers. Of course, what you say will be confidential, so I hope you will tell me what you really think.

1. In your experience as a Teacher in this Center, what kinds of things (duties, activities) are Project mothers who some in as volunteers best suited to do? (at first)

   ____

   ____

   Why (Tell me more about it)? ______________________

   ____

2. What kinds of duties or activities are they least qualified for? (at first)

   ____

   ____

   Why? ____

   ____

3. What kinds of duties or activities do you usually assign to such mothers when they come in? (at first)

   ____

   ____

4. How do you feel about having the mothers of the children coming to the Centers to work as volunteers?

   Unfavorable ________ Neutral ________ Favorable ________

   Why? ____

   ____

CDC TEACHER INTERVIEW - PAGE 2

5. What do you like (enjoy) most about the mother volunteers?

____

____

Why? __________________________

____

6. What bothers you most about them?

____

____

Why? __________________________

____

7. What changes (improvements) in the parent volunteer program would you like to see?

____

____

Why? __________________________

____

8. Would you like to see parent participation in the Centers continue?

YES ________ NO ________

9. You said ________, that you would (not) like to see it continued. Why do you feel that way?

____

____

PRETEST: STOP HERE. POST-TEST: CONTINUE TO END

All right, Mrs. _________, now I want to talk with you about Mrs. _________ the Project mother you have been training to use the teaching skills.

10. First, how did you feel at first about working with this mother?

Unfavorable _________ Neutral _________ Favorable _________

Why? ____

____

11. How do you feel now?

Unfavorable _________ Neutral _________ Favorable _________

Why? ____

____

12. What did you enjoy most about working with Mrs. _________?

____

____

Why? ____

____

13. What did you dislike the most about working with Mrs. _________?

____

Why? ____

____

14. What has been the greatest change(s) in her ability to work well with children?

____

15. In what way(s) is she still not very effective in teaching children?

____

16. How would you work to help her improve in these areas?

____

Why? ______________________________________

____

17. Has working with you and learning the teaching skills had any effect on Mrs. _________'s home life in general?

YES _________ NO _________ DK _________

Explain (what; why not) ____________________________

____

18. Has this training project had any effect on the way Mrs. _________ works with (teaches) her own children?

YES _________ NO _________ DK _________

Explain (in what ways; why not) ________________________

____

19. Has this mother training project had any effect on your program here at the Center?

YES _________ NO _________ DK _________

Explain (what; why not) ____________________________

____

20. (If not mentioned above): Has the mother training project affected how the Center staff works in carrying out the daily program?

YES _________ NO _________ DK _________

Explain (what; why not) ____________________________

____

(How do you/staff feel about this?) ______________________________

____

Now I am going to talk about each staff position here in the center and ask you to compare Mrs. __________, the mother you worked with and Mrs. (control mother), who also has participated here as a volunteer. I want you to tell me in each case which one you think would be most qualified to hold this position and why:

CHOICE

	Position	TA Vol.	O Vol.	Neither One	WHY:
21.	Transportation Aide				
22.	Cook				
23.	Teacher Aide				
24.	Teacher				
25.	Senior Teacher				

Thank you so much, Mrs. __________, for helping me with this information. We are finished with the interview unless you have any comments or questions.

Other Comments/question: ______________________________

____

____

APPENDIX F

Hypothesis 9:
Evaluation of Volunteer Experience
(Project Mothers)

NOT TO BE TAPED

(POST-TEST)

EVALUATION OF VOLUNTEER EXPERIENCE
(Project Mothers)

Before we finish this interview, Mrs. __________, I would like to talk with you about your experiences serving as a volunteer here at the Center.

1. First, what would you say is the purpose(s) of the volunteer program at the Center? (Ask for other purposes if only one is given.)

   A. ____

   B. ____

   C. ____

   D. ____

2. What have you done here as a volunteer that you enjoyed the most?

   ____

   Why? ______________________________________

3. What have you done that you didn't like very much (wouldn't want to do again)?

   ____

   Why? ______________________________________

4. Do you think serving as a volunteer has changed anything in your home life?

   YES _____ EXPLAIN ______________________________

   NO _____ EXPLAIN ______________________________

5. Has this experience changed the way you work with (teach) your child(ren)?

   YES _____ EXPLAIN ______________________________

   NO _____ EXPLAIN ______________________________

EVALUATION OF VOLUNTEER EXPERIENCE

(Project Mothers) - Page Two

(If not mentioned above) HOW ABOUT (Name) WHO ATTENDS THE CENTER?

YES _____ EXPLAIN ____

NO _____ EXPLAIN ____

6. Are you willing to continue as a volunteer here?

YES _____ EXPLAIN ____

NO _____ EXPLAIN ____

IF YES, What kind of duties (activities) would you like to have the most?

____

Why? ____

7. If you were able to choose one position only from the Center staff, would you most like to be a

Transportation Aide _____	Teacher Aide _____	Senior Teacher _____
Cook _____	Teacher _____	None of these _____

Why? ____

8. Which one of these positions do you feel you are most qualified for (on the basis of your volunteer experience or other experience)?

Transportation Aide _____	Teacher Aide _____	Senior Teacher _____
Cook _____	Teacher _____	None of these _____

Why? ____

9. In general, what do you think (opinion) of the volunteer program for parents at your Center?

____

Why? ____

EVALUATION OF VOLUNTEER EXPERIENCE

(Project Mothers) - Page Three

10. What changes would you like to see in the volunteer program for parents?

____

Why? ____

Thank you very much, Mrs. __________, for talking with me about these important matters. I appreciate your thoughts and opinions. Now, we are finished with the interview unless you have any other questions or thoughts.

Additional questions/comments: ____________________________

____

APPENDIX G

Hypotheses 6 and 8:
Teaching Task
Instructions-
Toy Sort[1]
Block Sort[1]
Block House[2]

Copyrighted Material Deleted

See bibliography beginning on p 193 for complete citations.

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[1] from Hess *et al* (1968)

[2] from Bee *et al* (1969)

APPENDIX H

Hypotheses 4-9:
Teacher Training Session Materials:
January Session Agenda
March Session Agenda
Mother Training Project Teaching Skills
Mother Training Project Training Schedule
Mother Training Project Monthly Report Form

MOTHER TRAINING PROJECT

Training Session

Thursday, January 15, 1970
Campton, Kentucky

AGENDA

10:00 - 12:00 A Review of the Mother Training Project

What is it? (goals, objectives)
How are we going to do it? (procedures, schedule)
Why are we doing it? (parent participation)

12:00 - 1:00 Lunch

1:00 - 2:00 Demonstration Using Activity Materials

Examples of how to teach each of the skills to be stressed with the mothers.

Role Playing - Small groups, using activity materials.

2:00 - 2:15 Break

2:15 - 3:00 Reactions and Questions

Summary of Session

Session Leader: Dr. Judith Archambo
Research Director

Participants: Rural Child Care
Project Teachers

Consultant: Mrs. Beulah Hardge
Demonstration and
Research Center for
Early Education,
Peabody College

MOTHER TRAINING PROJECT

Second Training Session

Tuesday, March 17, 1970

Rural Child Care Project Office, Whitesburg, Kentucky

AGENDA

10:00 - 10:15	Coffee
10:15 - 11:00	Review of Our Progress 1. Purpose of Monthly Reports 2. Special Achievements 3. Special Problems 4. Control Mothers
11:00 - 12:00	Demonstration of planning, carrying out and evaluating a teaching activity
12:00 - 1:00	Lunch
1:00 - 2:30	Role Play (small groups) using activity materials brought by each Teacher
2:30 - 2:45	Break
2:45 - 3:30	Reactions and Questions
	Summary

Session Leader:	Dr. Judith P. Archambo KCWRF Research Director
Consultant:	Mrs. Beulah Hardge DARCEE Home Visitor
Participants:	Rural Child Care Project Teachers participating in the Mother Training Project

MOTHER TRAINING PROJECT: Teaching Skills

The success of the Mother Training Project depends upon the kind of personal relationship that each Teacher and Project Mother pair develop. Both Teacher and Project Mother must be willing to work together and be enthusiastic about what they are doing. Both will learn far more from each other than we can ever "measure" or "analyze". However, there are some basic teaching skills which all of the Teachers will be expected to teach the Project Mother with whom they will be working from now until June on a once a week (or more often) basis. Each of these skills is listed below with a brief definition. These skills are to be taught during phases 1 and 2 of the Training Schedule and to be emphasized during the later phases when the Project Mothers take on increasing responsibilities as "teachers".

1. Positive Rewards ("Reinforcement") Help Learning

Verbal: Tell child "That's good" or "you are a good boy/girl".
Non-Verbal (physical): Smiles, hugs, pats, interested attention.

Begin with positive encouragement of the child himself. This establishes self-esteem and positive feelings toward the rewarding adult. Gradually shift from rewarding the child to rewarding his behavior (what he does) in small group activities.
Example: "Susy, I like the way you used that red crayon to color your picture." "Joe, I like the way you shut the door softly so you didn't wake the other children." "Tom, you did very well. You counted all the way to five. That is very good because yesterday you only could count to four."

2. Negative Rewards (Criticism) Help Learning

Verbal: Tell child "No, that was the wrong thing to do. You should have closed the door softly, like this, so none of the other children woke up." Do not say: "You are a bad boy/girl." It lowers self-esteem and does not help the child understand what he should do instead.

Non-Verbal (physical): Frown, restraining, spanking or hitting (not beating).

The use of criticism or punishment does not help a child learn what is correct or expected of him unless it is accompanied by an explanation that tells him WHY he was punished or criticized and WHAT he should do instead. When he does what is expected, his desired behavior should be rewarded immediately.

The use of verbal and physical rewards together is usually more effective than using either one alone. Work especially hard on getting the mother to explain her standards to the child when rewarding or criticizing/punishing. In the beginning, emphasize to the mother that she can control her child through the use of rewards rather than punishment and threats. Later, begin to show her how negative rewards and criticism can be used to help a child learn as long as they are coupled with helpful explanations and positive rewards when the child makes any attempt toward the desired behavior.

3. Questions and Elaboration of the Child's Verbalizations Help Learning

See the attached example from the Head Start Newsletter.[1]

Questions help an adult learn how much a child knows, therefore they help determine how and what a child needs to be taught.

Questions help an adult learn if what she is trying to teach is getting across to the child.

Questions help a child learn to think, to integrate what he is learning and to apply what he is thinking.

Questions help a child participate in learning. They enable him to express himself and they help him become more active in the learning situation.

"Elaboration" means to expand what a child says. For example, a Teacher asks, "What color is this, Joe?" Joe replies, "It is blue." The Teacher then elaborates by saying, "Yes, Joe, it is blue. It is a pretty, big blue ball with some white polka dots on it. You can play with it."

By elaborating the speech of children, they are exposed to new vocabulary and they are helped to understand more about the things that they are able to talk about.

Begin by showing through demonstration and discussion of activities how children do not learn effectively simply by being "told" or by being "lectured to". Show how a teaching plan can be changed to fit the level of understanding of a child once you find that level by questioning. Later, begin to show how you can increase a child's knowledge through elaboration of things he says spontaneously. The best procedure to use here is one of demonstration with children during activities. Also, discuss the role of these techniques when helping the mother plan activities.

---

[1] Blank, Marion. Exploring the commonplace. Head Start Newsletter, June, 1969, 4 (4), 5-6.

4. Structuring the Situation Helps Learning

When something new is presented, begin with what the child knows and gradually introduce the new and unfamiliar concepts.

Structuring involves what is said, how the child and adult are situated, how objects and materials are introduced and, most important of all, the adult's ability to maintain the child's attention and enthusiasm while giving necessary, accurate information about the new activity.

Structuring involves the integration of all the teaching skills presented in this list.

MOTHER TRAINING PROJECT: Training Schedule

The following schedule is a suggested guideline for each Teacher to use in planning her work with the Project mother assigned to her. The schedule can be changed to suit the needs and abilities of each Project mother. However, the Teacher should plan to spend some time in each phase of the schedule. The over-all goal is that all Project mothers will reach Phase 4 by April, 1970. However, the training program will continue until the Centers close in June. If any questions arise concerning this training schedule, please call Dr. Archambo collect (223-0864, area code 502) at once. Good Luck!

Phase	Goals/Suggested Activities	Time
1.	GOALS: Mother recognizes and can verbalize teaching skills when she sees them in Center activities. Mother is eager to learn more and likes working with Teacher. Discuss with mother how you will be working with her on small group teaching skills; observe activities with her, point out skills to be taught and explain philosophy and goals of RCCP program. Establish a friendship with her	2 - 4 weeks (2 - 4 sessions)
2.	GOALS: Mother uses teaching skills correctly and effectively in small group activities. Mother recognizes and can verbalize differences in children's learning abilities. Mother is trying skills at home. Pick one teaching skill at a time, demonstrate and discuss its use and importance, have mother practice it in small group activity under your supervision. Discuss afterward how she did. Discuss with her how she might practice skills at home.	4 - 6 weeks (4 - 6 sessions)
3.	GOALS: Mother plans small group activity with Teacher assistance. Mother is learning how to use curriculum materials in Center and at home. Mother is encouraged to develop her own materials.	(can overlap with phase 2) 6 - 8 weeks (6 - 8 sessions)

Phase	Goals/Suggested Activities	Time
3. (cont'd)	Show mother how activities are planned. Include mother in planning sessions. Get mother to help plan small group activities with increasing responsibility. Role play with mother the use of materials in activities. Visit home and discover with her "teaching" uses of objects within home. Obtain regular "Progress Reports" from mother on home activities.	
4.	GOALS: Mother plans and carries out an entire small group activity without assistance. Mother can use curriculum materials effectively. Mother is developing for Center and home use her own materials and activities. Mother is able to work effectively with children of different abilities and dispositions. Continue activities begun in phase 2 with increasing demand and encouragement for mother to become an independent teacher. Discuss planning and success of activities before and after. Help mother fit her approach to the needs of individual children. Assist mother to become aware of how much her child and other children are achieving and areas where they need help to achieve more. Continue to include mother in planning sessions and discuss with her what role she may wish to play in the future (i.e., teacher aide, continuing volunteer, assist with home visits, train other mother volunteers).	(can overlap with phase 3) 4 - 6 weeks (4 - 6 sessions)

MOTHER TRAINING PROJECT MONTHLY REPORT FORM

Month of________________

Teacher________________ County________________ Center________________

Mother________________

Date	Teaching Activity (Describe in detail)	Time	Comments

These reports are to be mailed at the first of each month (January through June, 1970) in the envelopes provided to Dr. Judith Archambo, Research Office, P. O. Box 713, Frankfort, Kentucky, 40601. Please describe your teaching activity with the mother in detail. Include your frank comments. Use an additional sheet of paper if necessary. When you feel the mother has achieved the goals for the phase she is in, please note this in your comments. Feel free to write down additional information at any time or call Dr. Archambo collect (223-0864, area code 502). Thank You!

APPENDIX I

Hypothesis 5:
Maternal Control Strategy Appeals and Modes[1] (Definitions and Examples) Used to Code Items 5 and 12-20 of The Attitudes Interview

---

[1] Based upon Hess *et al* (1968)

MATERNAL CONTROL STRATEGIES

Appeals

STATUS-NORMATIVE

The mother appeals to social norms (rules, roles) or the status (power) of an authority figure. She expects the child to comply. The child's role is passive and conforming.

PERSONAL-SUBJECTIVE

The mother directs the child's attention to the feelings and internal reactions of others (which she defines for the child) who would be affected by his behavior. The role of the child is less passive. He is asked to put himself into the place (role, internal state) of others.

COGNITIVE-RATIONAL

The mother requires the child to anticipate the future outcome of his behavior and possible consequences. The child determines what he is to do based upon logical cause and effect considerations (no matter how simple) which he deduces. The child's role is active. The mother helps the child internalize a problem solving strategy which he can apply to new situations.

Modes

Imperative Statements

The mother issues an unqualified command which explicity does not allow the child any alternative except compliance. A source of reference or authority may or may not be named. No explanation or rationale for the command is offered, however.

Instructive Statements

The mother offers a rationale for a command by appealing to status (power) relationships, social norms (role expectations), personal considerations or a rational argument. Some discretion or choice on the part of the child may or may not be implied.

Examples of *Appeals* and *Modes*

STATUS-NORMATIVE

Imperative	"Mind the teacher." (authority rationale is not explicit)
Instructive	"Mind the teacher because she is in charge." (status) "Mind the teacher because all children are supposed to be good in school." (norms-role)

PERSONAL-SUBJECTIVE

Instructive	"Mind the teacher because if you don't she'll get all tired out and can't help the other children." "Don't beat up on others because you don't like it if they beat up on you."

COGNITIVE-RATIONAL

Instructive	"What would happen if you were bad at school...? How do you think you should act, then?"

GENERAL

Imperative	Simple command, no rationale. "I would tell him to be good."
Instructive	Informative statement. "You will go to school to play, have fun, and learn about new things.

APPENDIX J

Hypothesis 5:
Summary of Results for "The Attitudes Interview" (Pretest Only)

Table J1: Hypothesis 5: Attitudes Interview (AI). Responses of Project Mothers (Experimental and Control), Project Teachers and Middle Class Mothers.

Item 1: Most mothers with small children[1] have to spend some time teaching them new things. Think of something that you had to teach __(Name)__ in the last few days . . . .

	PME (N=17)[2]		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Personal socialization	7	41.2	6	60	13	48.1	8	42.1	9	42.8
Interpersonal socialization	4	23.5	1	10	5	18.5	4	21.0	2	9.5
Academic skills	2	11.8	1	10	3	11.1	2	10.5	6	28.6
Other (eg. concept of death; non-academic skills)	3	17.6	1	10	4	14.8	5	26.3	3	14.3
None - No Response	1	5.9	1	10	2	7.4	0	0	1	4.8

---

[1] Throughout the interview, Project Teachers answered each item in terms of their youngest child (when he or she was of preschool age).

[2] For some items, the number of responses exceeds N. In all cases, per cents are based upon the number of respondents using the given response category.

Hypothesis 5: Attitudes Interview - Pretest, Page 2.

Item 1b: . . . . and tell me how you did it.

	PME (n=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Demonstration	6	35.3	6	60	12	44.4	9	47.4	15	71.4
Do it for child until he learns	0	0	1	10	1	3.7	0	0	0	0
Use various materials	1	5.9	0	0	1	3.7	1	5.3	0	0
Verbal instructions only	8	47.0	2	20	10	37.0	7	36.8	4	19.0
Punishment	0	0	0	0	0	0	2	10.5	0	0
Don't Know, Remember; No Response	2	11.8	1	10	3	11.1	0	0	2	9.5

Hypothesis 5: Attitudes Interview - Pretest, Page 3.

Item 2: Generally, when you have to teach something new to (Name) what things do you have to remember to say and do?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Get attention or interest	0	0	1	10	2	7.4	7	36.8	1	4.8
Explain carefully what child is to do	2	11.8	1	10	3	11.1	4	21.0	4	19.0
Show concern, interest, patience	6	35.3	2	20	8	29.6	4	21.0	5	23.8
Present material on child's level	0	0	0	0	0	0	2	10.5	6	28.6
Be harsh or strict on child	0	0	1	10	1	3.7	0	0	0	0
Other (eg. praise for attempt)	7	41.2	0	0	7	25.9	4	21.0	6	28.6
Unscorable (eg. irrelevant incident related)	1	5.9	3	30	4	14.8	0	0	0	0
No Response - Don't Know	3	17.6	2	20	5	18.5	0	0	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 4.

Item 3: What does __________ do while he's at the Center (Nursery School or Kindergarten) that pleases you the most?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Shows socially acceptable behavior toward peers	7	41.2	5	50	12	44.4	8	42.1	10	47.6
Shows socially acceptable behavior toward adults	1	5.9	1	10	2	7.4	4	21.0	1	4.8
Shows academic learning	1	5.9	2	20	3	11.1	1	5.3	8	38.1
Shows development of independence	2	11.8	1	10	4	14.8	5	26.3	0	0
Other (eg. personal hygiene; speaking clearly)	6	35.3	1	10	6	22.2	4	21.0	4	19.0
No Response	0	0	1	10	1	3.7	0	0	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 5.

Item 4: What does he do at the Center (Nursery School or Kindergarten) that (annoys) bothers you the most?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=21)		MC (N=19)	
	f	%	f	%	f	%	f	%	f	%
Shows undesirable behavior toward peers	0	0	1	10	1	3.7	6	31.6	3	14.3
Shows undesirable behavior toward adults or authority figures	1	5.9	3	30	4	14.8	1	5.3	4	19.0
Shows immature behavior	7	41.2	1	10	8	29.6	7	36.8	3	14.3
Other	2	11.8	1	10	3	11.1	5	26.3	0	0
Nothing - No Response	7	41.2	4	40	11	40.7	1	5.3	11	52.4

Hypothesis 5: Attitudes Interview - Pretest, Page 6.

Item 5: When you knew that (Name) was going to be attending the Center (Nursery School or Kindergarten), what did you say (do) to get him (her) ready to come? (for the experience)

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Orientation toward enjoyment	6	35.3	3	30	9	33.3	13	68.4	6	28.6
Benefit from socializing experiences	1	5.9	2	20	3	11.1	5	26.3	3	14.3
Orientation toward learning	1	5.9	1	10	2	7.4	0	0	2	9.5
Orientation toward authority (eg. mind teachers)	2	11.8	2	20	4	14.8	3	15.8	1	4.8
Prepare child for independence	0	0	0	0	0	0	0	0	2	9.5
Give honest evaluation of expectations	0	0	0	0	0	0	0	0	0	0
Vague or unscorable	2	11.8	2	20	4	14.8	0	0	1	4.8
Nothing	5	29.4	2	20	7	25.9	0	0	7	33.3

Hypothesis 5: Attitudes Interview - Pretest, Page 7.

Item 5a: In general, what do you think mothers should say and do to get their children ready to attend the Centers (Nursery School or Kindergarten)?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Orientation toward enjoyment	5	29.4	2	20	7	25.9	8	42.1	7	33.3
Benefit from socializing experiences	2	11.8	1	10	3	11.1	7	36.8	3	14.3
Orientation toward learning	1	5.9	0	0	1	3.7	0	0	2	9.5
Orientation toward authority (eg. mind teachers)	3	17.6	3	30	6	22.2	3	15.8	4	19.0
Prepare child for independence	2	11.8	1	10	3	11.1	4	21.0	5	23.8
Give honest evaluation of expectations	0	0	1	10	1	3.7	0	0	0	0
Vague or unscorable	5	29.4	1	10	6	22.2	0	0	1	4.8
Nothing	1	5.9	1	10	2	7.4	1	5.3	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 8.

Item 5b: What should children be told about the teacher?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Teacher is: Authority	11	64.7	5	50	16	59.2	4	21.0	8	38.1
Teacher is: Friend	4	23.5	4	40	8	29.6	10	52.6	11	52.4
Teacher is: Mother substitute	2	11.8	1	10	3	11.1	6	31.6	3	14.3
Child determines relationship with Teacher	0	0	0	0	0	0	1	5.3	3	14.3
No Response	1	5.9	1	10	2	7.4	0	0	0	0

Hypothesis 5: Attitudes Interview - retest, Page 9.

Item 5c: About the other children?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Stresses socially accepted behavior toward peers	13	76.5	8	80	21	77.8	8	42.1	11	52.4
Stresses similarity of background and reasons for attending	0	0	0	0	0	0	3	15.8	3	14.3
Stresses forming new friendships	4	23.5	2	20	6	22.2	9	47.4	6	28.6
No Response	1	5.9	0	0	1	3.7	0	0	2	9.5

Hypothesis 5: Attitudes Interview - Pretest, Page 10.

Item 6: When (Name) is ready to go to the first grade, how will you prepare him (her) for it?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Be clean and appropriately dressed	0	0	0	0	0	0	1	5.3	0	0
Have good manners - behavior	1	5.9	2	20	3	11.1	0	0	0	0
Focus on teacher (eg. mind teacher)	0	0	1	10	1	3.7	2	10.5	0	0
Other children	0	0	0	0	0	0	2	10.5	0	0
Academic orientation (eg. learn to read)	3	17.6	3	30	6	22.2	6	31.6	7	33.3
Visit school or familiarize with verbally before hand	1	5.9	1	10	2	7.4	9	42.1	8	38.1
No preparation needed	8	47.0	3	30	11	40.7	5	26.3	5	23.8
No Response - Don't Know - Vague	4	23.5	1	10	5	18.5	0	0	2	9.5

Hypothesis 5: Attitudes Interview - Pretest, Page 11.

Item 7: Would you do anything different to prepare __(Name)__ for public school than for the Center (Nursery School or Kindergarten)?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Yes - Compare the center to new school	2	11.8	1	10	3	11.1	6	31.6	7	33.3
Yes - Learning orientation	0	0	0	0	0	0	4	21.0	3	14.3
Yes - They'll need more clothes, etc.	0	0	1	10	1	3.7	1	5.3	0	0
Yes - No reason given	0	0	2	20	2	7.4	0	0	0	0
No - No reason given	15	88.2	6	60	21	77.8	8	42.1	11	52.4

Hypothesis 5: Attitudes Interview - Pretest, Page 12.

Item 8a: Have you been able to spend some time in the Centers (Nursery School or Kindergarten)?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Yes	14	82.4	7	70	21	77.8	19	100.0	10	47.6
No	3	17.6	3	30	6	22.2	0	0	11	52.4

Hypothesis 5: Attitudes Interview - Pretest, Page 13.

Item 8b: IF YES: What kinds of things do the teachers do when they begin to teach something new to the children?

IF NO: What kinds of things do you think the teachers might do when they begin to teach something new to the children?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Explain	8	47.0	3	30	11	40.7	12	63.2	5	23.8
Plan teaching in terms of goals	0	0	0	0	0	0	2	10.5	2	9.5
Use demonstration and/or equipment, special materials	8	47.0	3	30	11	40.7	12	63.2	11	52.4
Create enthusiasm	2	11.8	1	10	3	11.1	2	10.5	4	19.0
Don't Know - No Response (Can't answer)	5	29.4	4	40	9	33.3	1	5.3	1	4.8

Hypothesis 5: Attitudes Interview - Pretest, Page 14.

Item 9: What do you like most about the way the children are taught (handled) in the Centers (Nursery School or Kindergarten)?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Consistent methods used	0	0	0	0	0	0	0	0	2	9.5
Provides new experiences (self-expression)	0	0	0	0	0	0	1	5.3	2	9.5
Kids have fun - enjoy it	0	0	0	0	0	0	1	5.3	2	9.5
Treat all children fairly, individually: no pressure	4	23.5	2	20	6	22.2	6	31.6	5	23.8
Everything	1	5.9	1	10	2	7.4	0	0	2	9.5
Cites specific behavior rather than generalized principle	9	52.9	7	70	16	59.2	11	57.9	9	42.8
Don't Know	3	17.6	0	0	3	11.1	0	0	1	4.8

Hypothesis 5: Attitudes Interview - Pretest, Page 15.

Item 10: What do you dislike most about the way the children are taught (handled) in the Centers (Nursery School or Kindergarten)?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Not enough discipline	0	0	1	10	1	3.7	1	5.3	0	0
Taking naps	0	0	1	10	1	3.7	0	0	1	4.8
General center routine (eg. too much free time; groups too large)	1	5.9	0	0	1	3.4	5	26.3	1	4.8
Physical problems of building	0	0	0	0	0	0	2	10.5	0	0
Unscorable	2	11.8	0	0	2	7.4	1	5.3	1	4.8
Nothing	14	82.4	8	80	22	81.5	10	52.6	17	81.0

Hypothesis 5: Attitudes Interview - Pretest, Page 16.

Item 11: What things can you think of that first, second, and third grade teachers do to help children learn new things?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Use teaching aides	3	17.6	1	10	4	14.8	7	36.8	10	47.6
Rewards and incentives	0	0	0	0	0	0	1	5.3	0	0
Teaching methods	5	29.4	4	40	9	33.3	8	42.1	7	33.3
Interest child in new subjects	2	11.8	0	0	2	7.4	2	10.5	4	19.0
Don't Know - No Response - Vague	10	58.8	5	50	15	55.6	3	15.8	3	14.3

Hypothesis 5: Attitudes Interview - Pretest, Page 17.

Item 12: After (Name) goes to school, what would you do if you found out he (she) was talking and cutting up in class when the teacher told the children to be quiet?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Verbal explanation	6	35.3	6	60	12	44.4	15	78.9	18	85.7
Physical punishment or other sanctioning	3	17.6	3	30	6	22.2	1	5.3	4	19.0
Leaves decision to school authorities	1	5.9	1	10	2	7.4	2	10.5	0	0
Desires school authority to handle it but will intervene	3	17.6	0	0	3	11.1	1	5.3	1	4.8
Confer with teacher to find solution	4	23.5	1	10	5	18.5	6	31.6	5	23.8
Let kids fight it out	0	0	0	0	0	0	0	0	0	0
Don't Know - No Response - Vague	1	5.9	0	0	1	3.7	0	0	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 18.

Item 13: What would you do if the teacher (scolded) got on (Name) in front of the class and sent him (her) to the principal's office for something he (she) didn't do?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Parent talks to teacher or principal	12	70.6	9	90	21	77.8	17	89.5	12	57.1
Child talk to teacher or principal	0	0	0	0	0	0	0	0	1	4.8
Direct child without further investigation	0	0	0	0	0	0	1	5.3	4	19.0
Do nothing	2	11.8	0	0	2	7.4	1	5.3	4	19.0
Don't Know - No Response	3	17.6	1	10	4	14.8	0	0	1	4.8

Hypothesis 5: Attitudes Interview - Pretest, Page 19.

Item 14: What would you do if (Name) beat up another child at school who had done nothing to him (her)?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Verbal explanation	1	5.9	1	10	2	7.4	6	31.6	8	38.1
Physical punishment or other sanctioning	12	70.6	10	100	22	81.5	9	47.4	13	61.9
Leaves decision to school authorities	1	5.9	0	0	1	3.7	3	15.8	1	4.8
Desires school authority to handle it but will intervene	2	11.8	0	0	2	7.4	1	5.3	0	0
Confer with teacher to find solution	0	0	0	0	0	0	2	10.5	2	9.5
Let kids fight it out	0	0	0	0	0	0	0	0	0	0
Don't Know - No Response Vague	1	5.9	0	0	1	3.7	2	10.5	1	4.8

Hypothesis 5: Attitudes Interview - Pretest, Page 20.

Item 15: What would you do if (Name) was beat up by some other child at school when (Name) hadn't done anything to deserve it?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Talk to teacher	9	52.9	6	60	15	55.6	15	78.9	12	57.1
Encourage child to fight back	0	0	0	0	0	0	0	0	5	23.8
Expect teacher to punish	2	11.8	1	10	3	11.1	2	10.5	1	4.8
Parent defends the child himself	0	0	0	0	0	0	0	0	0	0
Talk to other parent	8	47.0	4	40	12	44.4	1	5.3	5	23.8
No Response - Don't Know - Vague	2	11.8	1	10	3	11.1	1	5.3	0	0
Take no stand; let child handle or forget it	2	11.8	1	10	3	11.1	2	10.5	4	19.0

Hypothesis 5: Attitudes Interview - Pretest, Page 21.

Item 16: What would you do if (Name) wasn't doing his (her) work at school or his (her) homework that the teacher assigned?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Parent help child (incentive)	5	29.4	6	60	11	40.7	5	26.3	8	38.1
Schedule time - insist child do it	5	29.4	2	20	7	25.9	8	42.1	11	52.4
Let teacher enforce it	1	5.9	0	0	1	3.7	1	5.3	1	4.8
Investigate the reason for disinterest	3	17.6	0	0	3	11.1	7	36.8	5	23.8
Talk to teacher	2	11.8	1	10	3	11.1	3	15.8	4	19.0
Use punishment	4	23.5	2	20	6	22.2	3	15.8	1	4.8
No Response - Don't Know	1	5.9	0	0	1	3.7	0	0	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 22.

Item 17: What would you do if (Name) had some work that he (she) didn't understand how to do, or the teacher had not bothered to explain it?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Parent help child to understand	16	94.1	9	90	25	92.6	13	68.4	16	76.2
Leave it to teacher to explain	0	0	1	10	1	3.7	1	10.5	3	14.3
Confer with teacher	5	29.4	1	10	6	22.2	7	26.3	6	28.6
Get child to seek extra help from teacher	1	5.9	0	0	1	3.7	3	15.8	1	4.8
Do nothing	0	0	0	0	0	0	0	0	1	4.8
No Response - Don't Know	0	0	0	0	0	0	0	0	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 23.

Item 18: What would you do if (Name) had to miss school and got behind the other children?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Parent get work from teacher and help child	6	35.3	4	40	10	37.0	11	57.9	14	66.7
Parent help child alone	7	41.2	5	50	12	44.4	5	26.3	5	23.8
Parent help only if teacher won't	1	5.9	0	0	1	3.7	1	5.3	0	0
Parent ask teacher to come to house and help child	1	5.9	1	10	2	7.4	1	5.3	1	4.8
Parent expect teacher to let child catch up	2	11.8	0	0	2	7.4	0	0	1	4.8
Do nothing	1	5.9	0	0	1	3.7	1	5.3	1	4.8
No Response - Don't Know	0	0	0	0	0	0	0	0	1	4.8

Hypothesis 5: Attitudes Interview - Pretest, Page 24.

Item 19: What would you do (or say) if some morning (Name) didn't want to go to the Center (Nursery School or Kindergarten) and you knew that he wasn't sick and that there wasn't any reason that he shouldn't go?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Make child go	13	76.5	8	80	21	77.8	11	57.9	11	52.4
Punish	2	11.8	0	0	2	7.4	0	0	0	0
Not make him	0	0	2	20	2	7.4	4	21.0	6	28.6
Find out reason	2	11.8	1	10	3	11.1	9	47.4	8	38.1
Let child decide	2	11.8	0	0	2	7.4	0	0	3	14.3
Talk to teacher	0	0	0	0	0	0	2	10.5	0	0
No Response - Don't Know	1	5.9	0	0	1	3.7	0	0	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 25.

Item: 20: Does (Name) have an older brother or sister? YES ____ NO ____

(IF NO: Let's pretend (Name) does have an older brother.)
If (Name) wanted to play with his (her) older brother's (sister's) school books and you knew he would tear them up, how would you handle this situation. (What would you do?)

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Not permit - take away	11	64.7	7	70	18	66.7	2	10.5	8	38.1
Not permit - substitute	4	23.5	3	30	7	25.9	13	68.4	12	57.1
Permit	2	11.8	0	0	2	7.4	3	15.8	1	4.8
No Response - Don't Know	0	0	0	0	0	0	1	5.3	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 26.

Item 21a: If you could go back to school without any worries about money, how far would you like to go?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Some high school	0	0	0	0	0	0	0	0	0	0
High school graduate	3	17.6	4	40	7	25.9	0	0	0	0
Some college	1	5.9	0	0	1	3.7	0	0	0	0
College degree	10	58.8	6	60	16	59.2	13	68.4	5	23.8
Graduate degree	0	0	0	0	0	0	6	31.6	11	52.4
Other	2	11.8	0	0	2	7.4	0	0	2	9.5
No further	0	0	0	0	0	0	0	0	1	4.8
No response	1	5.9	0	0	1	3.7	0	0	2	9.5

Hypothesis 5: Attitudes Interview - Pretest, Page 27.

Item 21b: How far did you go in school?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Eighth grade or less	6	35.3	5	50	11	40.7	1	5.3	0	0
Some high school	7	41.2	4	40	11	40.7	1	5.3	0	0
High school graduate (GED)	3	17.6	1	10	4	14.8	7*	36.8	0	0
Some college	1	5.9	0	0	1	3.7	10	52.6	8	38.1
College degree	0	0	0	0	0	0	0	0	7	33.3
Graduate degree	0	0	0	0	0	0	0	0	6	28.6

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*This includes one person who received the GED.

Hypothesis 5: Attitudes Interview - Pretest, Page 28.

Item 22: If your child (Name) could go as far in school as he (she) wanted to, how far would you want him to go?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Some high school	0	0	0	0	0	0	0	0	0	0
High school graduate	2	11.8	1	10	3	11.1	0	0	0	0
Some college	2	11.8	0	0	2	7.4	1	5.3	0	0
College degree	12	70.6	8	80	20	74.1	9	47.4	9	42.8
Graduate degree	0	0	0	0	0	0	8	42.1	8	38.1
Other	1	5.9	1	10	2	7.4	1	5.3	4	19.0

Hypothesis 5: Attitudes Interview - Pretest, Page 29.

Item 23: What do you think it would require (take) for (Name) to go that far?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Financial ability	15	88.2	4	40	19	70.4	9	47.4	5	23.8
Attitude, desire	3	17.6	2	20	5	18.5	10	52.6	17	81.0
Discipline	2	11.8	1	10	3	11.1	2	10.5	5	23.8
Intelligence or academic ability	4	23.5	1	10	5	18.5	3	15.8	7	33.3
Encouraging environment	3	17.6	1	10	4	14.8	6	31.6	3	14.3
No Response - Don't Know	2	11.8	4	40	6	22.2	2	10.5	0	0

Hypothesis 5: Attitudes Interview - Pretest, Page 30.

Item 24: How far do you think (Name) will really go?

	PME (N=17)		PMC (N=10)		PM Total (N=27)		PT (N=19)		MC (N=21)	
	f	%	f	%	f	%	f	%	f	%
Finish grade school	1	5.9	0	0	1	3.7	0	0	0	0
Finish high school	11	64.7	7	70	18	66.7	2	10.5	1	4.8
Attend college	4	23.5	2	20	6	22.2	2	10.5	0	0
Get a college degree	0	0	1	10	1	3.7	12	63.2	13	61.9
Get a graduate degree	0	0	0	0	0	0	3	15.8	3	14.3
No Response - Don't Know	1	5.9	0	0	1	3.7	0	0	4	19.0

APPENDIX K

Hypotheses 5a-5b:
Maternal Control Strategies According to Mode and Appeal (Attitudes Interview, Items 5 and 12-20)

TABLE K1: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 5: "What did you say (do) to get (Name) ready for preschool?"

Mode	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Imperative	0	0	0	2	0
Instructive	11	5	16	15	6
Appeal					
Status-Normative	1	0	1	2	0
Personal-Subjective	0	0	0	0	0
Cognitive-Rational	0	0	0	0	0
Mixed	0	1	1	1	1
No Score*	6	4	10	1	14

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*Respondent did not mention a child-oriented control strategy.

TABLE K2: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 12: "What would you do if he was talking . . . in class?"

Mode	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Imperative	4	4	8	6	2
Instructive	3	2	5	4	10
Appeal					
Status-Normative	4	6	10	7	3
Personal-Subjective	3	0	3	1	7
Cognitive-Rational	0	0	0	0	0
Mixed	0	1	1	2	0
No Score	10	3	13	7	9

TABLE K3: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 13: "What would you do if the teacher scolded (Name) (unfairly)?"

Mode	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Imperative	0	1	1	0	0
Instructive	3	1	4	1	4
Appeal					
Status-Normative	0	0	0	0	0
Personal-Subjective	1	0	1	0	2
Cognitive-Rational	0	0	0	1	0
Mixed	0	0	0	0	0
No Score	14	8	22	18	17

TABLE K4: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 14: "What would you do if _(Name)_ beat up another child?"

Mode	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Imperative	3	3	6	3	1
Instructive	2	3	5	0	7
Appeal					
Status-Normative	3	5	8	2	4
Personal-Subjective	1	0	1	0	3
Cognitive-Rational	0	0	0	0	0
Mixed	0	0	0	0	1
No Score	12	4	16	16	12

TABLE K5: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 15: "What would you do if (Name) was beat up?"

	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Mode					
Imperative	1	1	2	1	3
Instructive	3	0	3	2	4
Appeal					
Status-Normative	0	1	1	0	0
Personal-Subjective	3	0	3	2	3
Cognitive-Rational	0	0	0	0	0
Mixed	0	0	0	0	0
No Score	13	9	22	16	14

TABLE K6: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 16: "What would you do if (Name) wasn't doing homework?"

Mode	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Imperative	1	2	3	1	0
Instructive	2	5	7	5	6
Appeal					
Status-Normative	0	1	1	1	2
Personal-Subjective	1	3	4	2	2
Cognitive-Rational	0	0	0	0	0
Mixed	0	1	1	0	0
No Score	14	2	16	13	15

TABLE K7: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 17: "What would you do if (Name) had some work he didn't understand?"

Mode	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Imperative	1	0	1	2	0
Instructive	0	0	0	2	4
Appeal					
Status-Normative	0	0	0	0	0
Personal-Subjective	0	0	0	0	0
Cognitive-Rational	0	0	0	0	0
Mixed	0	0	0	0	0
No Score	16	10	26	15	17

TABLE K8: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 18: "What would you do if (Name) missed school and got behind?"

Mode	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Imperative	0	0	0	0	0
Instructive	0	0	0	0	0
Appeal					
Status-Normative	0	0	0	0	0
Personal-Subjective	0	0	0	0	0
Cognitive-Rational	0	0	0	0	0
Mixed	0	0	0	0	0
No Score	17	10	27	19	21

TABLE K9: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 19: "What would you do if (Name) didn't want to go to (preschool)?"

Mode	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Imperative	2	1	3	4	1
Instructive	7	4	11	4	7
Appeal					
Status-Normative	2	0	2	2	1
Personal-Subjective	3	2	5	2	3
Cognitive-Rational	0	0	0	0	0
Mixed	0	1	1	0	0
No Score	8	4	12	11	13

TABLE K10: Hypotheses 5a-5b: Maternal Control Strategies Expressed on Items 5 and 12-20 of The Attitudes Interview. Middle Class Mothers, Project Teachers and Project Mothers (Experimental and Control Groups). Pretest.

Item 20: "What would you do if (Name) wanted to play with (sibling's) books?"

	PME (N=17)	PMC (N=10)	PM (N=27)	PT (N=19)	MC (N=21)
Mode					
Imperative	1	1	2	2	3
Instructive	9	6	15	8	6
Appeal					
Status-Normative	3	3	6	5	3
Personal-Subjective	4	1	5	1	1
Cognitive-Rational	0	0	0	0	0
Mixed	0	0	0	2	0
No Score	7	3	10	7	12

APPENDIX L

Hypotheses 6a-6c: Verbal Teaching Skills: Teaching Task - Block Sort Definitions and Examples For Coding Categories And Statement Units

Hypotheses 6a-c
CODING SYMBOLS - VERBAL TEACHING SKILLS
Teaching Task - Block Sort

POSITIVE FEEDBACK (+)

+0 Non-Instructive Feedback: Statements (e.g., "good," "right," "uh huh," "OK," "fine") which do not refer specifically to the response or act that is being rewarded.

+I Instructive Feedback: The adult links her praise with the specific act or response being rewarded. E.g., "Yes, that block does go there with the other blue ones." Good! You put it with the other O's." "Right, that is a tall, blue one."

NEGATIVE FEEDBACK (-)

-0 Non-Instructive Feedback: Statements (e.g., "No," "Don't do that." "That doesn't go there." "Wrong.") which inhibit or stop the child, indicate disapproval or that he is making an error without additional information as to why he is wrong or what he should do instead to be correct.

-I Instructive Feedback: The adult corrects the child or explains what the child is doing wrong, why it is wrong and/or what he should do instead. E.g., "No, the blue block doesn't go there. It goes with the other blue ones." "No, that is wrong. You put it with the tall X's but it is short." "That's not an 'X', that's an 'O'."

TASK INFORMATION (TI)

TI Non-Instructive: Statements which indicate the task is a game and which do not clearly spell out the adult's role as teacher, the child's role as learner and/or the nature of the task to be learned.

TII Instructive: Statements which clearly indicate the task involves the adult teaching the child how to place the blocks on the board and the expectation the child will be able to perform the task for the examiner after he learns how to do it.

CODING SYMBOLS - VERBAL TEACHING SKILLS - PAGE 2
Teaching Task - Block Sort

TMI	Mis-Information: Any statement the adult makes which does not accurately represent the nature of the task as it was explained by the examiner. E.g., "This is a game - I'm gonna watch and see if you can figure how it goes." "Here, you are 'sposed to take these blocks and put em on this board. You do it." Included in this category are errors in instruction, showing the child incorrectly how to sort the blocks, or telling the child to do something incorrect, such as sorting only on one dimension instead of two. Note: This category takes precedence over others (e.g., Directing Statements).

SORTING PRINCIPLE (SP)

SP	Labeling Dimensions: Adult teaches child the name of a dimension without relating it to the sorting principle. E.g., "This is an X." "This block is blue." "See, these blocks are different sizes."
SP1	One Dimension: Adult mentions one dimension of the sorting principle in the process of demonstrating or explaining the task to the child. E.g., "See, the X's go together and the O's go together."
SP2	Two Dimensions: Adult mentions both dimensions of the sorting principle in the process of demonstrating or explaining the task to the child. E.g., "See, the tall X's go here, the short O's go here and the short X's here and the tall O's here."

DIRECTING STATEMENTS (D)

D	Non-Instructive: Simple directions to the child regarding what he should do or say without any accompanying explanation as to the reason. These statements may involve getting a child to place a block or to label, identify or recognize a stimulus characteristic without reference to the sorting principle. E.g., "Put that one over there." "Tell me what this one is." "Put the blue one over there."
DI	Instructive: Same as above, with additional explanation clearly related to the sorting principle. Some aspect of the sorting principle is verbalized. E.g., "Put that one over there because it's red and the red ones go together." "Put the X block with the other tall X's."

This category includes requests for the child to verbalize the sorting principle: "Tell me why you put the red one over there." However, a request for verbalization of the worting principle must be specific. For example, the direction, "Tell me what you should do with this block." would be scored as "D" unless followed by "Why?"

DA Directing Attention: Statements designed to get, regain or direct the child's attention. E.g., "Watch me now." "Look here." "Stop that, I want you to look at the blocks." "No, you can't leave until we have finished doing this game."

QUESTIONS (Q)

Q Non-Instructive: A question which requires a simple "yes", "no" or labeling response. "What is this?" "Does that one go there?" "Can you pick that up and put it here?"

QI Instructive: A question which focusses the child on the sorting principle as a means of getting him to perform correctly. E.g., "Why does that one go there?' "Do you know why that blue block doesn't go in that square?" The intent of the question is to get the child to verbalize the sorting principle or some rationale for what he is doing.

Directions for Determining the Total Number of Adult Statement Units

1. Determine the total number of statements first, before scoring in the above categories. Each category score will be expressed as a proportion of total statements.

2. Statements are defined as follows:

   a. A single thought with a single focus, usually no longer than one complete sentence.

   b. A statement may contain more than one complete sentence if the break between sentences is arbitrary with respect to a scoring category.

   c. A complete sentence may have more than one statement within it.

CODING SYMBOLS - VERBAL TEACHING SKILLS - PAGE 4
Teaching Task - Block Sort

d. A verbalization assigned a given category score may contain only one statement.

e. Not all statements will necessarily be scorable within the categories (above) selected for these analyses.

APPENDIX M

Hypothesis 9:
Summary of Results for "CDC Teachers Interview: Attitudes Toward Project Volunteers" (Pretest Items)

Hypothesis 9:
CDC TEACHER ATTITUDES TOWARD PROJECT VOLUNTEERS (TA-PV) - Pretest
Interview Results
(N=19)[1]

Item 1: "First, tell me how long you have had a volunteer program in this center?"

Category	Frequency	Per Cent
2 Years	8	42.1
3 Years	5	26.3
4 Years	3	15.8
5 Years	3	15.8

"What kinds of persons come to the Center as volunteers mostly?"

Category	Frequency	Per Cent
Mothers	16	84.2
Fathers	2	10.5
Clergy	2	10.5
Students	1	5.3
Community people	7	36.8
Trainable	1	5.3
Untrainable (can't do program much good)	1	5.3
Extremely disadvantaged	1	5.3
Moderately disadvantaged	1	5.3
NYC Girls	1	5.3

"What kinds of things do they do?"

Category	Frequency	Per Cent
Menial tasks (unspecified)	1	5.3
Kitchen work	10	52.6
General maintenance and cleaning	2	10.5
Sewing	2	10.5
Play games with children	4	21.1
Participate in special project events, decorate	4	21.1
Assist teacher aide	3	15.8
Help child in table work (art)	9	43.4
Read stories	7	36.8

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[1] Based upon sample receiving both pre- and post-test measures.

Hypothesis 9: TA-PV - Pretest Results, Page 2

Category	Frequency	Per Cent
Lead singing and music	1	5.3
Give child individual attention	1	5.3
Does very little or nothing	1	5.3
Work with Homemaker	1	5.3

Item 2: "In your experience as a Teacher in this Center, what kinds of things (duties, activities) are Project mothers who come in as volunteers best suited to do?" (When they first come in)

Category	Frequency	Per Cent
Kitchen work	8	42.1
Cleaning and maintenance	4	21.1
Supervise playground	2	10.5
Supervise bathroom	1	5.3
Supervise simple activities - i.e. table activities	2	10.5
Observe teacher in activities	3	15.8
Help in art work and decoration	5	26.3
Read or tell stories	5	26.3
Singing and music	2	10.5
Work on their own projects	1	5.3
Sewing	2	10.5

Item 3: "What kinds of duties or activities are they least qualified for?" (When they first come in)

Category	Frequency	Per Cent
Teaching	4	21.1
Supervising children	2	10.5
Participation in activities in child development method	1	5.3
Read, tell stories	2	10.5
Handling problem children or situations	2	10.5
Take a group of children on a trip alone	1	5.3
Art work activities	4	21.1
Music activities	7	36.8
Speech activities	2	10.5
Table work activities	1	5.3

Hypothesis 9: TA-PV - Pretest Results, Page 3

Category	Frequency	Per Cent
Book (records) keeping	1	5.3
Planning activities program	1	5.3
Health related aspects (nutrition, cleanliness)	1	5.3
All activity involving staff interaction	1	5.3

Item 4: "What kinds of duties or activities do you usually assign to such mothers when they come in?" (at first)

Category	Frequency	Per Cent
Manual duties	2	10.5
Kitchen work	3	15.8
Playing games and playground supervision	2	10.5
What mother wants most to do	4	21.1
What teacher feels mother can best do	2	10.5
Allow mothers to observe	2	10.5
Ask her to work with all the children	2	10.5
Let her work with her own children	2	10.5
Table activities	4	21.1
Help with decoration	1	5.3

Items 5 & 6: "How do you feel about having the mothers of the children coming to the Centers to work as volunteers? Then you would say that you feel unfavorable, neutral, or favorable?"

Category	Frequency	Per Cent
Very positive (no mention of who benefits)	4	21.1
Generally positive except when related to job training	1	5.3
Generally positive except desired to solve problem of very small kids in center	4	21.1
Positive - (expresses benefit to child and for his family)	3	15.8

Category	Frequency	Per Cent
Positive (expresses benefit to RCCP only)	1	5.3
Positive (expresses benefit to both family and RCCP)	2	10.5
Neutral	1	5.3
Generally positive but mentions adjustment problems	3	15.8
Child is upset when mother is there	1	5.3

Item 7: "What do you like (enjoy) most about the mother volunteers?"

Category	Frequency	Per Cent
Mother's interest in children	5	26.3
The mother's social contacts outside home	3	15.8
Communication between mother and staff	5	26.3
Better understand child when know mother	4	21.1
Allows mother to see what Project is doing	1	5.3
The help volunteers give to the staff	1	5.3
Allows mother to see own child working	2	10.5

Item 8: "What bothers you most about them?"

Category	Frequency	Per Cent
Mothers bring small children to center	5	26.3
Upset center routine	3	15.8
Improper attitudes (expectations) towards children	3	15.8
Threaten whipping children	2	10.5
Lack of interest or participation	2	10.5
Lack of cleanliness	1	5.3
Stay in kitchen	1	5.3

Hypothesis 9: TA-PV - Pretest Results, Page 5

Category	Frequency	Per Cent
Nothing	1	5.3
Teacher finds it hard to first approach volunteers	1	5.3
Teacher doesn't know how to involve volunteers	2	10.5

Item 9: "What changes (improvements) in the parent volunteer program would you like to see?"

Category	Frequency	Per Cent
More volunteer participation	6	31.6
Better organization and scheduling	6	31.6
Have mother volunteer in a center other than the one her child attends	2	10.5
Better training and participation	4	21.1
Solve problems about care of small children	1	5.3
Better explanation of volunteer program by Foundation	1	5.3
None	1	5.3

Items 10 & 11: "Would you like to see parent participation in the Centers continue? Why?"

Category	Frequency	Per Cent
Yes - Helps mothers or family as a whole	1	5.3
Yes - Teaches nutrition to parents	1	5.3
Yes - Increases potential earning power	1	5.3
Yes - Helps staff understand child better	1	5.3
Yes - Helps staff (more manpower)	3	15.8
Yes - Helps child by changing the parents	3	15.8

Hypothesis 9: TA-PV - Pretest Results, Page 6

Category	Frequency	Per Cent
Yes - Shows parents what program does	2	10.5
Yes - Need volunteers for community support	1	5.3
Yes - No reason given	6	31.6

APPENDIX N

Hypothesis 9:
Summary of Results for
"CDC Teachers Interview:
Attitudes Toward Project Volunteers"
(Post-Test Items 10-25)

Hypothesis 9:
CDC TEACHER ATTITUDES TOWARD PROJECT VOLUNTEERS (TA-PV) - Post-test
Interview Results
(Items 10 - 25 only)
(N=19)[1]

Alright, Mrs. ________, now I want to talk with you about Mrs. ________ the Project mother you have been training to use the teaching skills.

Item 10: "First, how did you feel at first about working with this mother? Why?"

Category	Frequency	Per Cent
Favorable - benefit expressed for mother	10	52.63
Unfavorable - teacher didn't know what was expected of her	3	15.78
Neutral - no response	2	10.52
Favorable - benefit expressed for child	1	5.26
Favorable - benefit expressed for RCCP only	1	5.26
Favorable - benefit expressed for RCCP and family	1	5.26
Unfavorable - teacher wasn't sure of mother's feelings	1	5.26

Item 11: "How do you feel now? Why?"

Category	Frequency	Per Cent
Favorable - benefit expressed for mother	12	63.15
Favorable - benefit expressed for RCCP or staff only	4	21.05
Favorable - benefit expressed for RCCP and family	2	10.52
Unfavorable - teacher worked with mother only short while	1	5.26

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[1] Based upon sample receiving both pre- and post-test measures.

Hypothesis 9: (TA-PV) - Post-test Results, Page 2

Item 12: "What do you enjoy most about working with Mrs. _________? Why?"

Category	Frequency	Per Cent
Mother's ability, willingness to learn, even from criticism	4	21.05
Mother was pleasant, cooperative	3	15.78
Mother's interest in own children; use of skills with them	3	15.78
Teacher's sense of success, confidence	2	10.52
Mother's improvement; her skill with children	2	10.52
Mother's improved appearance, cleanliness	1	5.26
Mother helped teacher understand child better	1	5.26
Mother's sense of humor	1	5.26
Working together on a project	1	5.26
Don't Know	1	5.26

Item 13: "What did you dislike the most about working with Mrs. _______? Why?"

Category	Frequency	Per Cent
Nothing	6	31.57
Mother didn't come when scheduled or often enough	4	21.05
Mother's failure to prepare or select appropriate materials	2	10.52
Mother's lack of self-confidence in getting acquainted with children	2	10.52
Infringing on mother's time or job	1	5.26
Mother's discipline too strict	1	5.26
Mother's religious beliefs overbearing	1	5.26
The added responsibility of working with mothers as well as children	1	5.26
Don't Know	1	5.26

Hypothesis 9: (TA-PV) - Post-test Results, Page 3

Item 14: "What has been the greatest change(s) in her ability to work well with children?"

Category	Frequency	Per Cent
Mother is more confident	7	36.84
Mother gives positive rewards to child	3	15.78
Teacher has not worked with mother long enough	3	15.78
Mother wants to get involved	2	10.52
Mother works well with children	1	5.26
Mother has more patience	1	5.26
Mother holds children's interest	1	5.26
Mother understands goals of program	1	5.26

Items 15 and 16: "In what way(s) is she still not very effective in teaching children? How would you work to help her improve? Why?"

Category	Frequency	Per Cent
Teacher would encourage, praise and train (through role playing) to help her gain confidence to present activity on her own	6	31.57
Mother is effective (nonspecific)	3	15.78
Don't Know (Mother hasn't been in Center often enough)	3	15.78
Teacher would talk to mother to help her increase volume of her voice	2	10.52
Teacher has shown mother other means of discipline besides spanking	2	10.52
Teacher would show mother how to use expression in activities	1	5.26
Teacher would encourage mother to let child care for himself and express himself more	1	5.26
Teacher would set up activities to help mother explain word meanings to children	1	5.26

Hypothesis 9: (TA-PV) - Post-test Results, Page 4

Item 17: "Has working with you and learning the teaching skills had any effect on Mrs. _____'s home life in general?"

Category	Frequency	Per Cent
Mother uses teaching skills at home	6	31.57
Don't Know - teacher hasn't visited home	4	21.05
Mother has more patience with child(ren)	3	15.78
Mother's appearance has improved	2	10.52
Mother has better relationship with family	1	5.26
Mother gives own children more responsibility	1	5.26
No effect - not in Center enough to learn skills	1	5.26
Conflict: Mother had to give more time to Center than she had available	1	5.26

Item 18: "Has this training project had any effect on the way Mrs._____ works with (teaches) her own children?"

Category	Frequency	Per Cent
Mother uses skills at home	5	26.31
Don't Know	5	26.31
Mother has more patience with own children; listens to her children more; attitude toward family improved	5	26.31
Mother lets child(ren) express himself more openly	2	10.52
Mother has learned to think problem and situations through	1	5.26
Activities had definite influence on mother (unspecified)	1	5.26

Hypothesis 9: (TA-PV) - Post-test Results, Page 5

Item 19: "Has this mother training project had any effect on your program here at the Center?"

Category	Frequency	Per Cent
Difficult for teacher to arrange free time to train mother; staff and aides have to take over	4	21.05
Mothers served effectively as aides	3	15.78
Better relationship in Centers between children, mothers and staff; strengthened program	3	15.78
No	3	15.78
Staff realized mothers could be trained; mothers are accepted better	2	10.52
Mothers learned to use positive rewards in the home	1	5.26
Activities had to be made simple for mother	1	5.26
Other staff confused about scheduling problems, their role, teacher's role	1	5.26
Mothers confused about their role	1	5.26

Item 20: "(If not mentioned above): Has the mother training project affected how the Center staff works in carrying out the daily program?"

Category	Frequency	Per Cent
Extra planning was necessary; staff took over while teacher trained mother	7	36.84
Working with mother made staff more conscious of objectives and planned unit activities	4	21.05
Don't Know	4	21.05
Mother participation helps Center staff	2	10.52
Small children brought by mothers created extra work for staff	1	5.26
No Data	1	5.26

Hypothesis 9: (TA-PV) - Post-test Results, Page 6

Items 21-25: "Now I am going to talk about each staff position here in the Center and ask you to compare Mrs. __________, the mother you worked with and Mrs. (control mother) __________, who also has participated here as a volunteer. I want you to tell me in each case which one you think would be most qualified to hold this position and why."

Item 21: "Transportation Aide"

REASONS	More experienced driver	Mother drives	Familiar with country	More patient	More responsible	Can discipline better	Mothers or mother cannot drive	Perseverence	Frequency	Per Cent
Project Training Mother	2	3	1	1	2			1	10	52.63
Project Control Mother	2	2				1	1		6	31.57
Neither							3		3	15.78

Hypothesis 9: (TA-PV) - Post-test Results, Page 7

Item 22: "Cook"

REASONS	Mother had training	Efficient volunteer	Personality perseverence	Very interested in nutrition	Shows much responsibility	Good cook	More experience	Very neat and clean	No Data	Frequency	Per Cent
Project Training Mother	1	1	1	2	2	3				10	52.63
Project Control Mother						1	4	1		6	31.57
Neither									2	2	10.52
Both						1				1	5.26

Hypothesis 9: (TA-PV) - Post-test Results, Page 8

Item 23: "Teacher Aide"

	REASONS	Knows goals of program	Interested and responsible	Had training	Equally qualified	Easy way with children	Not enough experience	Shows definite potential	No Data	Frequency	Per Cent
Project Training Mother		1	3	8		1		2	1	16	84.21
Project Control Mother							1			1	5.26
Neither							1			1	5.26
Both					1					1	52.6

Hypothesis 9: (TA-PV) - Post-test Results, Page 9

Item 24: "Teacher"

REASONS	Had training	More interested	Shows responsibility	Personality with children	Not enough experience	Shows potential	No Data	Frequency	Per Cent
Project Training Mother	6	1	3	2	1	1		13*	68.42
Neither					3		1	4	21.05
Project Control Mother			1		1			2	10.52

* One teacher gave two reasons for her choice.

Hypothesis 9: (TA-PV) - Post-test Results, Page 10

Item 25: "Senior Teacher"

REASONS	[illegible]lizes goals [illegible] program	Had training	More experience	More responsible	Not trained	Hesitant of responsibility	Not enough experience	More interest	Shows potential	No Data	Frequency	Per Cent
Neither					4	1	4			1	10	52.63
Project Training Mother	1	3	1	1				1	1		8	42.10
Project Control Mother				1							1	5.26

APPENDIX O

Hypothesis 9:
Summary of Results for "Evaluation of Volunteer Experience" Interview (Project Mothers)

Hypothesis 9:
PROJECT MOTHERS EVALUATION OF VOLUNTEER EXPERIENCE INTERVIEW (EVEI)
Interview Results
(N=28)[1]

Item 1: "First, what would you say is the purpose(s) of the volunteer program at the Center?"

Category	Frequency	Per Cent
Benefit to staff or RCCP and family	9	32.1
Benefit to mother (teaches mother -- gives social outlet etc.)	8	28.5
Benefit to both mother and child	5	17.8
Benefit to child i.e. (child learns better)	4	14.2
Benefit to staff or RCCP only	2	7.1
Names specific duty (i.e. help serve food)	1	3.5

---

[1] Based upon sample receiving both pre- and post-test measures.

Hypothesis 9: EVEI - Post-test Results, Page 2

Item 2: "What have you done here as a volunteer that you enjoyed the most? Why?"

REASONS	I enjoy it	Children like it	I'm good at it	I love children	Can't do it at home	No Data	Frequency	Per Cent
Work with kids (general)	2			1		6	9	32.1
Kitchen Work			1		1	2	4	14.2
Field Trips	2		1			1	4	14.2
Art or other table activities	2					1	3	10.7
Read or tell stories	2					1	3	10.7
Special events	1			1		1	3	10.7
Play games/playground activities		1			1		2	7.1
Sewing	1						1	3.6
Everything						1	1	3.6
Don't Know						1	1	3.6

Hypothesis 9: EVEI - Post-test Results, Page 3

Item 3: "What have you done that you didn't like very much (wouldn't want to do again)? Why?"

REASONS	I like it all	I don't like it	It doesn't accomplish anything	Takes too much patience	No Data	Frequency	Per Cent
Nothing	5				18	23	82.1
Cooking		1				1	3.6
Attending PAC meetings			1			1	3.6
Sewing				1		1	3.6
Discipline children					1	1	3.6
No Data					1	1	3.6

Hypothesis 9: EVEI - Post-test Results, Page 4

Item 4: "Do you think serving as a volunteer has changed anything in your home life? Why?"

REASONS	Help the children more (general)	Children are more cooperative	Help mother understand more about her child	Help mother be out more	More patience and tolerance of kids	Learn better cooking	See difference in children	Behind in my work	Look forward to it	Can't spend much time in center	Don't Know	No Data	Frequency	Per Cent
Yes	1	1	3	3	3	1	1		1				14	50.0
No								1		1	1	11	14	50.0

Hypothesis 9: EVEI - Post-test Results, Page 5

Item 5: "Has this experience changed the way you work with (teach) your child(ren)? Why?"

REASONS	Give more specific explanation	Show more patience	Read to my own children	Calmer with my child	I have better manners	I handle children like staff does	I handle them about the same	Better understanding of child	Must cope with negative responses	Don't Know	No Data	Frequency	Per Cent
No							5			1	8	14	50.0
Yes	2	4	1	2	1	1		1	1			13	46.4
No Data											1	1	3.6

Hypothesis 9: EVEI - Post-test Results, Page 6

Item 6: "Are you willing to continue as a volunteer here? Why?"

Category	Frequency	Per Cent
Yes - No explanation	18	62.1
Yes - I like it	4	13.8
Yes - It will help me raise my kids right	3	10.3
Yes - Whenever they need me	3	10.3
Yes - If my children are in the center	1	3.4

Hypothesis 9: EVEI - Post-test Results, Page 7

"What kind of duties (activities) would you like to have the most? Why?"

REASONS	I enjoy it	Kids enjoy it	Learn better to work with family	To get to know the children	Children are more interested in this	No Data	Frequency	Per Cent
Work with kids (general)	5	1	1	2		5	14	50.0
Read or tell stories	1	2				2	5	17.9
Kitchen work	2	1				1	4	14.3
Teach children (general)	1					1	2	7.1
Anything						2	2	7.1
Music	1						1	3.6
Sewing						1	1	3.6
Anything except cooking						1	1	3.6
Teach kids concepts					1		1	3.6
Don't Know						1	1	3.6

Hypothesis 9: EVEI - Post-test Results, Page 8

Item 7: "If you were able to choose one position only from the Center staff, would you most like to be a ___________? Why?"

REASONS	I enjoy it	I like to work with staff	I like children	Not as much responsibility	I can learn more	To help with children	Help me with my family	Earn money and have time home	Experience	No Data	Frequency	Per Cent
Teacher aide	2	1	7	2	1	1			1	2	17	60.7
Teacher	1		3			1	1				6	21.4
Transportation Aide	1							1			2	7.1
Cook	1									1	2	7.1
Senior teacher			1								1	3.6

Hypothesis 9: EVEI - Post-test Results, Page 9

Item 8: "Which one of these positions do you feel you are most qualified for (on the basis of your volunteer experience or other experience)? Why?"

REASONS	I have experience	I've been learning those duties	I only have this experience or skill	Good driving record	I enjoy it	Because of volunteer program	Don't Know	No Data	Frequency	Per Cent
Teacher Aide	5	1	1			1		3	11	39.3
Cook	3		2		1			1	7	25.0
None							1	2	3	10.7
Transportation Aide	1			1					2	7.1
Teacher	1					1			2	7.1
Don't Know							1	1	2	7.1
Senior Teacher	1								1	3.6

Hypothesis 9: EVEI - Post-test Results, Page 10

Item 9: "In general, what do you think (opinion) of the volunteer program for parents at your Center? Why?"

Category	Frequency	Per Cent
Positive - (expresses benefit to child and/or his family)	15	53.5
Positive but needs more participation	6	21.4
Positive (expresses benefit to both family and RCCP)	2	7.1
Other	2	7.1
Very positive (no mention of who benefits)	1	3.5
Positive (expresses benefit to RCCP only)	1	3.5
Generally positive but mentions adjustment problems	1	3.5

Item 10: "What changes would you like to see in the volunteer program for parents? Why?"

Category	Frequency	Per Cent
Don't Know	14	50.0
More participation	13	46.4
More special projects	1	3.5

APPENDIX P

Hypothesis 10:
UCLA Language Tests
Children's Auditory Discrimination Inventory (CADI)
Administration and Scoring Procedures

CHILDREN'S AUDITORY DISCRIMINATION INVENTORY (CADI)[1]

UCLA Research Projects in Early Childhood Learning
Carolyn Stern, Director

The CADI consists of 38 pairs of words and 38 cards with two pictures on each card. One picture word in each pair is a real picture representing a familiar word and the second picture is a nonsense picture paired with a nonsense word. To avoid positional responding, the real and nonsense pictures are randomly located on the left or right side of the card. All the real words have been pretested and demonstrated to be within the vocabulary of the population of whom the test is intended; the nonsense words and pictures have been selected as being low in association value, based on a previous study (Stern, 1964). All the word pairs have been submitted to linguistic analysis to obtain a hierarchy of phonemic contrasts, ranging from gross discriminations to minimal pairs.

The CADI is prepared in two forms. Form A asks for one member of a pair and Form B asks for the second member of the pair. The examiner names both pictures, always naming the real word and pointing to the real picture first.

PROCEDURE

The examiner says: Here are some pictures. Some are real pictures and some are funny pictures. The real picture has a real name. Can you tell me the name of this picture? (POINT TO GIRL) It is a girl.

(POINT TO NONSENSE PICTURE) Here is a funny picture. The funny picture has a funny name. It is a hujuj. Which is the hujuj?

Now, I'm going to ask you to point to one picture. Listen carefully and point to the picture I name. Ready? This is a girl and this is a hujuj. Point to __________ (GIRL OR HUJUJ, WHICHEVER IS UNDERLINED).

(MAKE SURE CHILD POINTS TO CORRECT PICTURE BEFORE PROCEEDING TO SECOND ITEM.) Now, here is a phone (POINT) and here is a volvap. Point to __________ (WHICHEVER IS UNDERLINED). (RECORD PLUS OR MINUS NEXT TO EACH NUMBER.)

(IF CHILD DOES NOT RESPOND TO FIRST TWO ITEMS, REPEAT PROCEDURE FROM BEGINNING. IF NO RESPONSE, DISCONTINUE TEST AND RETURN ANOTHER DAY.)

---

[1] Reproduced from examiner's manual with permission.

Name: ______________________ I.D.#: ______________________

Center: ______________________ Examiner: ______________________

County: ______________________ Date: ______________________

CADI FORM A

1.______1. Girl, hujuj
2.______2. Phone, volvap
3.______3. Horse, ulna
4.______4. Clock, koopay
5.______5. Sleeping, sagrole
6.______6. Wagon, zagon
7.______7. Boat, boatch
8.______8. Dog, dob
9.______9. Sun, thun
10.______10. Duck, dup
11.______11. Egg, edd
12.______12. Scissors, fissors
13.______13. Hat, hap
14.______14. Shoes, thoes
15.______15. Jump, dump
16.______16. Plane, plame
17.______17. Valentine, thalentine
18.______18. Church, shurch
19.______19. Book, dook
20.______20. Mouse, mouf
21.______21. Shirt, sirt
22.______22. Leaf, leath
23.______23. Coat, poat
24.______24. Bus, bush
25.______25. Door, goor
26.______26. Cow, tow
27.______27. Stove, stothe
28.______28. Read, reab
29.______29. Table, pable
30.______30. Fish, fith
31.______31. Bed, bej
32.______32. Money, noney
33.______33. Ball, gall
34.______34. Children, tildren
35.______35. Dress, dreth
36.______36. Falling, thalling
37.______37. Sock, sot
38.______38. Brush, brutch

Name: ______________________ I.D.#: ______________________

Center: ______________________ Examiner: ______________________

County: ______________________ Date: ______________________

CADI FORM B

1._____1. Girl, hujuj

2._____2. Phone, volvap

3._____3. Horse, ulna

4._____4. Clock, koopay

5._____5. Sleeping, sagrole

6._____6. Wagon, zagon

7._____7. Boat, boatch

8._____8. Dog, dob

9._____9. Sun, thun

10._____10. Duck, dup

11._____11. Egg, edd

12._____12. Scissors, fissors

13._____13. Hat, hap

14._____14. Shoes, thoes

15._____15. Jump, dump

16._____16. Plane, plame

17._____17. Valentine, thalentine

18._____18. Church, shurch

19._____19. Book, dook

20._____20. Mouse, mouf

21._____21. Shirt, sirt

22._____22. Leaf, leath

23._____23. Coat, poat

24._____24. Bus, bush

25._____25. Door, goor

26._____26. Cow, tow

27._____27. Stove, stothe

28._____28. Read, reab

29._____29. Table, pable

30._____30. Fish, fith

31._____31. Bed, bej

32._____32. Money, noney

33._____33. Ball, gall

34._____34. Children, tildren

35._____35. Dress, dreth

36._____36. Falling, thalling

37._____37. Sock, sot

38._____38. Brush, brutch

APPENDIX Q

Hypothesis 10:
UCLA Language Tests
Expressive Vocabulary Inventory (EVI)
Administration and Scoring Procedures

EXPRESSIVE VOCABULARY INVENTORY (EVI)[1]

UCLA Research Projects in Early Childhood Learning
Carolyn Stern, Director

The Expressive Vocabulary Inventory (EVI) is designed as a measure of verbal facility with young children. It includes 40 items selected after a tabulation of frequencies of words found in primers, word lists, achievement and intelligence tests, and tape recordings of classroom speech. It represents a sampling of the vocabulary children are expected to possess when they enter kindergarten. The EVI provides a larger number of suitable words than most intelligence and achievement measures and should thus be more reliable for this age level. The task requires the actual production of the appropriate word itself.

Whereas most vocabulary tests are heavily weighted with nouns, the stimuli in the EVI represent a variety of parts of speech. There are progressive verbs, pronouns, prepositions, adjectives, and adverbs, as well as verbs, nouns. Credit is given only if the appropriate word form is used.

PROCEDURE

The EVI is an individually administered test with the examiner reading the statements on the back of the card, while the child looks at the picture. If the child does not produce the desired word, the statement should be repeated, stressing the appropriate part of the sentence. For example, item 2 attempts to elicit the preposition "in". If when the child is asked, "Where is the cat?" he responds "box", the examiner should repeat the question, saying, "Yes, but where is the cat?" A maximum of one probe is permitted per item.

SCORING

Record on the score sheet when a word other than the one listed is used. If the correct word is produced, enter "+"; if no response, enter "-". The score is the total number of correct words.

---

[1] Reproduced from the examiner's manual with permission.

Additional Scoring Procedures[1]

I. Please follow this procedure for recording answers:

   A. If correct, write "+".

   B. If incorrect, write down the error in full.

   C. If incorrect, put a / mark after the error you recorded and probe (e.g., "What else do you call it", etc. . . .)

   D. If probed response is correct, indicate "+".

   E. If probed response is incorrect, write out error in full and go on to next item.

   F. In all cases, a failure to respond initially or to a probe is indicated by a "-" mark.

II. Discontinue testing if the child fails 10 items consecutively and you feel it is useless to try further.

III. Try not to use more than one probe per item. In the case of items 1, 8, 27 and 38, use "yes, but what else do you call it?". Credit bunny, rooster, hen, but not groceries or guitar (credit fiddle, however). Item 33 ask "How is the rabbit going?" If on Item 14 the child says "water", ask "Yes, but what is the water in?". Item 16, "In back of" for "behind". Item 20, ask "How much of the apple is this?". Item 35 credit ABC's in place of letters. Credit sitting "in" as well as sitting "on" the chair for item 40. Item 21, credit "breakfast" as well as other meals.

---

[1] Devised by KCWRF Research Division, March, 1970.

EXPRESSIVE VOCABULARY INVENTORY FOR CHILDREN RECORD SHEET

UCLA Research Projects in Early Childhood Learning

Year Month Day

Name: ______________________________ Testing Date: ______________________

I.D.#: _____________ Sex: M F ______ Birthdate: ______________________

County: ____________________________ Age: ______________________

Center: ____________________________ C.A.: ______________________

Examiner: __________________________ Total Score: ____________

(MARK + IF CORRECT. IF NO RESPONSE, MARK -. RECORD WORD IF DIFFERENT.)

1. __________ (rabbit)
2. __________ (in)
3. __________ (cut)
4. __________ (sleeping or "to sleep in")
5. __________ (mouth)
6. __________ (under)
7. __________ (walking)
8. __________ (chicken)
9. __________ (square)
10. __________ (numbers)
11. __________ (out or up)
12. __________ (swimming)
13. __________ (skinny or thin)
14. __________ (glass)
15. __________ (drink)

21. __________ (eating, having dinner, supper or lunch)
22. __________ (nest)
23. __________ (down)
24. __________ (riding)
25. __________ (stove)
26. __________ (longer)
27. __________ (food)
28. __________ (running)
29. __________ (over)
30. __________ (engine)
31. __________ (pennies)
32. __________ (head)
33. __________ (fast)
34. __________ (throw [it])
35. __________ (letters)

16. __________ (behind)

17. __________ (animals)

18. __________ (larger or bigger)

19. __________ (leaf)

20. __________ (half)

36. __________ (she)

37. __________ (her)

38. __________ (viola or violin)

39. __________ (sitting)

40. __________ (on)

APPENDIX R

Hypothesis 10:
UCLA Language Tests
Parallel Sentences Production Test (PSPT)
Administration and Scoring Procedures

PARALLEL SENTENCE PRODUCTION TEST[1]

UCLA Research Projects in Early Childhood Learning
Carolyn Stern, Director

PROCEDURE

The revised ofrm of the Parallel Sentence Production Test includes 20 items. Each card presents two black-and-white drawings which can be described by parallel sentences. The child hears the sentence for the picture on the left and is asked to produce a comparable sentence for the picture on the right. There are two sample items (not scored) which establish the task. The examiner may repeat these model items two or three times, if necessary, to be sure the child understands what he is supposed to do. If the child is unable to respond to the sample items he is not to be given the test. In some cases, a second visit may serve to familiarize the child and enable him to respond.

SCORING

The examiner marks on the record sheet any deviations from the expected response. The actual computation of the score is carried out after the test period.

One point is given for each complete sentence, and one point for each word identical to the one on the answer sheet. The maximum score for each item is in parentheses after the sentence. Certain exceptions should be noted:

1. No points are given for "a".

2. Allow substitutions as follows:

   the-this-that   little-small   outside-outdoors

   the-these-those   big-large

3. No extra credit is given for insertions or additions provided spontaneously by the child, nor is any credit lost for additions, except when interpolations result in an incomplete sentence.

---

[1] Reproduced from examiner's manual with permission.

Additional Procedures[1]

1. Introduce this test by saying:

> "I'm going to tell you about one picture and you are going to tell me about the other picture. This is how we do it. Watch. (Do demonstration.) Now you do it with me. (Repeat stimulus picture, then point to response, repeat full demonstration above and portion where child responds.)."

2. Discontinue testing if the child fails 10 consecutive items.

3. Probe or repeat the stimulus item if the child fails to respond or does not hear you. Caution inattentive children to "listen carefully and get the next one just right". Praise general performance.

4. Additional acceptable substitutions are: don't for do not, isn't for is not, it's for it is, fishes for fish, lion for dog (picture is misleading), thin for skinny. Do not accept under for in or ladies for women.

5. A "complete" sentence is any grammatically complete sentence even if it departs from what is written on the score sheet. Write down additions and cross out omitted words.

---

[1] Devised by KCWRF Research Division, March, 1970.

PARALLEL SENTENCE PRODUCTION RECORD SHEET (L)

UCLA Research Projects in Early Childhood Learning

Year Month Day

Name: ______________ Testing Date: ______________

I.D.#: ______________ Birthdate: ______________

County: ______________ Age: ______________

Center: ______________ C.A.: ______________

Examiner: ______________ Total Score: ________

A. (POINT TO PICTURE ON LEFT) This cat is playing with a ball.
(POINT TO PICTURE ON RIGHT) This dog is playing with a bone.
(CONTINUE POINTING TO PICTURE ON RIGHT) Now you tell me about this picture.
(IF CORRECT, REINFORCE RESPONSE. DO NOT PROCEED UNTIL CHILD ATTEMPTS SENTENCE.)

B. (POINT TO PICTURE ON LEFT) The little boy is riding a little bike.
(POINT TO PICTURE ON RIGHT) The big boy is riding a big bike.
(CONTINUE POINTING TO PICTURE ON RIGHT) Now you tell me about this picture.
(DO NOT PROCEED UNTIL CHILD ATTEMPTS SENTENCE. REPEAT IF NECESSARY. IF CHILD REFUSED TO RESPOND, DISCONTINUE TEST AND RETURN ANOTHER DAY, IF POSSIBLE.)

EXAMINER	CHILD		POINT SCORE
1. This cat is sleeping.	1. This dog is sleeping.	(5)	_____
2. The boy is drawing a picture.	2. The girl is painting a picture.	(6)	_____
3. This big hat has many flowers.	3. This little hat has one flower.	(7)	_____
4. Some boys grow up to be doctors.	4. Some girls grow up to be nurses.	(8)	_____
5. The fat lady sat on a little chair.	5. The skinny lady sat on a big chair.	(8)	_____

6.	Elephants like to eat peanuts.	6.	Monkeys like to eat bananas.	(6)	_____
7.	The fork is on the plate.	7.	The spoon is in the cup.	(7)	_____
8.	The boy standing up and smiling is happy.	8.	The girl sitting down and crying is sad.	(9)	_____
9.	Birds fly in the air.	9.	Fish swim in the water.	(6)	_____
10.	The little boy is holding his balloon.	10.	The big girl is holding her ball.	(8)	_____
11.	The man is lifting a big heavy box.	11.	The lady is carrying a little light box.	(8)	_____
12.	The cat jumps into the box.	12.	The dog sits under the table.	(7)	_____
13.	When it is night, children sleep in bed.	13.	When it is day, children play outdoors.	(8)	_____
14.	This boy likes to skate.	14.	These boys like to swim.	(6)	_____
15.	In the summer the trees have leaves.	15.	In the winter the trees do not have leaves.	(10)	_____
16.	The boy throws the ball to her.	16.	The girl kicks the ball to him.	(8)	_____
17.	The boy feeds himself with a fork.	17.	The girl feeds herself with a spoon.	(7)	_____
18.	This girl is making her bed.	18.	This girl made her bed.	(6)	_____
19.	The girl with the short dress is wearing shoes.	19.	The girl with the long dress is not wearing shoes.	(11)	_____
20.	All of the mean are wearing hats.	20.	Some of the women are wearing hats.	(8)	_____
			TOTAL POSSIBLE	(149)	_____

APPENDIX S

Hypothesis 10:
UCLA Language Tests
Echoic Response Inventory for Children (ERIC)
Administration and Scoring Procedures

ECHOIC RESPONSE INVENTORY FOR CHILDREN[1]

UCLA Research Projects in Early Childhood Learning
Carolyn Stern, Director

Instructions for Administering ERIC: Form A or B

BE SURE the child understands the task before proceeding with the test. Before starting the tape recorder, say:

> "We're going to play a copycat game. Everytime I say something, you say exactly what I say. Say just what you hear. Listen carefully: [Dog (A); Cat (B)]. Now you say it."

If the child does not respond, continue urging, repeating the word if necessary, until the child says "dog" or "cat". Then say:

> "That was very good. Now try this one: [Big boy (A); Big girl (B)]. Go ahead. You say: Big (boy) (girl)."

Again continue urging until child speaks. If the child refuses to speak, discontinue test. If he repeats the sentence as instructed, say:

> "You're a very good copy-cat! Now let's listen to the tape recorder, and play the copy-cat game. Remember, you say just what you hear."

The tape provides five second intervals between sentences. This is usually sufficient for the shorter sentences, but if the child does not respond by the fourth second, hold the tape until he does.

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[1] Reproduced from the examiner's manual with permission.

Additional Procedures[1]

1. Use the remote control switch on the tape recorder so that it can be stopped if a child needs more time to respond. Note that items 16 - 20 have 10 second response intervals.

2. If the tape recorder is inoperable, administer the items yourself, allowing 5 second intervals for items 1 - 15 and 10 second intervals for items 16 - 20. Note this departure from standard procedure on your score sheet.

3. If a child fails to hear an item, back up the tape and repeat the item once. If the child is experiencing difficulty with hard items or is inattentive, hold the tape and encourage him to try to respond. Then caution the child to "listen carefully and do the best you can on the next one."

4. Scoring:

   a. Record all additions and cross out all omissions.

   b. Maximum credit per sentence (one error allowed) is one point.

   c. Criteria for errors are found on page 2 of the ERIC technical report. Basically a child is penalized for structural, grammatical errors and for omissions and additions but not for inarticulation.

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[1] Devised by the KCWRF Research Division, March, 1970.

Name: ______________________ I.D. #: ______________________

Center: ______________________ Examiner: ______________________

County: ______________________ Date: ______________________

Echoic Response Inventory for Children

FORM A

A. Dog.

B. Big boy.

1. Dogs bark.
2. Babies drink milk
3. The girl is going to school.
4. We're gonna get a surprise.
5. He pushed the door too hard.
6. Both those kids hate him.
7. Big boys play baseball.
8. Johnny was lost in the park.
9. The boy just went to his house.
10. Quite a good show is playing.
11. The young girl is sitting in the park.
12. My apple fell before I could catch it.
13. Mama asked me to come in.
14. He said you wanted the book.
15. If it's late, I have to hurry.
16. Billy and Jane built a playhouse all by themselves.
17. Before lunch, Betty washed her hands in the bathroom.
18. Green plants need both sunshine and water to make them grow.
19. More candy can be bought for a nickel than for a penny.
20. If the ground is wet, the children won't be able to play in the park.

Name: ______________________ I.D.#: ______________________

Center: ______________________ Examiner: ______________________

County: ______________________ Date: ______________________

Echoic Response Inventory for Children

FORM B

A. Cat.

B. Big girl.

1. Birds fly.
2. Horses eat grass.
3. The boy is going to bed.
4. We're gonna play a game.
5. He bounced the ball too high.
6. All those girls like her.
7. Most girls sew doll clothes.
8. Jane was taken to the movie.
9. The girl just ran to her yard.
10. Quite a large dog is barking.
11. The old lady is talking on the phone.
12. Her cookie broke before she could eat it.
13. Teacher asked me to stand up.
14. You knew she wanted the doll.
15. If it's late, he has to run.
16. Betty and Jack painted a picture all by themselves.
17. After school, Jane put her books on the shelf.
18. Automobile engines need both air and gas to make them go.
19. More people can be put in a city than on a farm.
20. If the weather is cold, the children won't be able to go to the bea[illegible]

APPENDIX T

Hypothesis 10:
UCLA Language Tests
Visual Discrimination Inventory (VDI)
Administration and Scoring Procedures

VISUAL DISCRIMINATION INVENTORY

Directions for Administration[1]

U C L A July, 1968

The VDI is designed to measure visual discrimination in children ages 3-6 years. It is administered individually and requires about ten minutes per child.

With the child seated facing you, present the first item. Read verbal cue A as written. When the child responds proceed to item B and read the verbal cue. Continue in this manner as rapidly as the child can answer. Throughout training, the examiner should correct errors and reward the child for correct responses.

All letter items, on blue background, are training items. Items E-J require the use of the Model Cards. These are ordered in correct sequence, starting with the cat for item E. For items K-Z the model appears on each item.

On items Q-Z the examiner must indicate the correct answer (regardless of whether the child is right or wrong) as indicated in the "Feedback" cues. Items V-Z are criterion items for the training sequence. The child must answer these five criterion items correctly before proceeding to test item 1. If he fails one or more of these items, repeat items Q-Z. If after two such repetitions the child still cannot correctly answer all five criterion items (V-Z), do not continue testing. No scores are recorded for performance on the training items. At any point during training the test may be discontinued if the child misses ten in a row.

The 33 test items to be scored are on white background. No corrective feedback may be given on any but items 19 and 20. For these two items the examiner may point to the correct answer following an incorrect response by the child, after the child's incorrect response is recorded on the answer sheet. If the child qualifies for test items, all 33 items must be administered regardless of the child's performance.

To record the child's answers,check the answer box corresponding to the position of the child's pointing response. Box 1 is on the examiner's left. Correct answers are indicated in parentheses to the right of the answer boxes. A child's score is the sum of the correct answers.

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[1] As modified by the KCWRF Research Division, March, 1970. Reproduced from examiner's manual with permission.

Visual Discrimination Inventory Score Sheet
U C L A July, 1968

Name: ____________________ Total # Correct (A+B): ____________

I.D.#: ____________________ Date Given: ____________

County: ____________________ Birthdate: ____________

Center: ____________________ C.A.: ____________

Instructions: Check box corresponding to position of child's response.

Child

1	2	3
	X	

Examiner

	1	2	3	
1.				(1)
2.				(3)
3.				(1)
4.				(1)
5.				(1)
6.				(1)
7.				(3)
8.				(3)
9.				(3)
10.				(3)
11.				(1)
12.				(3)
13.				(1)
14.				(1)
15.				(3)
16.				(1)
17.				(3)
18.				(1)
Subtotal A				

	1	2	3	
19.				(3)
20.				(1)
21.				(2)
22.				(3)
23.				(3)
24.				(3)
25.				(1)
26.				(1)
27.				(1)
28.				(3)
29.				(1)
30.				(3)
31.				(3)
32.				(3)
33.				(3)

Subtotal B ☐

APPENDIX U

A Plan for the Development of
FOCUSSED SERVICES PROGRAM VARIATIONS
Within the Rural Child Care Project
(Outline)

A Plan for the Development of

FOCUSSED SERVICES PROGRAM VARIATIONS

Within the Rural Child Care Project

(Outline)

Purpose

To increase the effectiveness of Rural Child Care Project child development and homemaking/social worker services through use of a "focussed services" staff implementation model. Focussing of Project services will be accomplished by:

1. Statement of child development and homemaking/social work program objectives in measurable terms.
2. Structuring of staff training, planning, supervision, and evaluation in terms of meeting these stated program objectives.
3. Development of Teacher-Homemaker teams designed to involve parents and children more effectively in the process of family socialization.

It is also proposed that manuals presenting Rural Child Care Project program objectives, staff procedures, and examples of child development and homemaking/social work program content be developed.

Study A

STATEMENT OF PROGRAM OBJECTIVES

Purpose

To specify in observable, measurable terms (behaviors or accomplishments) the program objectives for:

1. Child Development Program: Minimum social, motor, perceptual, linguistic, conceptual skills; attitudes toward self, adults, peers, school.

2. Homemaking Program: Minimum level of adequacy in meal planning, home child care; sewing and other specified homemaking skills stressed in the program; attitudes toward self, family, home.

3. Social Work Program: Minimum level of adequacy in family mental health, use of available community health and welfare resources. Involvement in Project parent and other community groups, including public school; attitudes toward self-help and community and school involvement.

Scope

A committee composed of a Child Development Specialist, the Education Specialist, two Regional Training Supervisors and three county staffs (Social Worker, Teachers, Homemakers) will develop statements of program objectives which accurately reflect the goals of the Rural Child Care Project and which are open to evaluation. Objectives will be stated in terms of minimum expectations for children and families at the time they leave the Project or upon completion of unit-based learning experiences.

Study B

DEVELOPMENT OF STAFF TRAINING, PLANNING AND SUPERVISION FOCUSSED UPON ACHIEVING STATED PROGRAM OBJECTIVES

Purpose

To implement over an eight month period the above stated objectives in a manner that will increase the ability of Project staff to realize their goals within a structured framework. To be implemented along lines of present parallel services staff model (with emphasis given to hiring additional staff as required to deliver homemaking services adequately) in order to determine present staff model effectiveness in comparison to focussed staff models (see Studies C and D).

Method

The basic approach will include:

1. Shortening of the program day to allow for daily supervisory, planning and evaluation sessions among the child development and homemaking/social work staff.

2. Specific staff and supervisory level training sessions (held every two months for two-three days) on the following subjects:
    a. assessment of family functioning and needs in terms of each program objective at time of intake.
    b. setting goals for individual and group change in terms of each objective.
    c. methods of achieving goals set for individuals and groups.
    d. continuous evaluation of progress in achieving goals.
    e. assessment of progress achieved when family is closed (or as each child "graduates").
3. Continuous ongoing evaluation of program by staff trained to use evaluation techniques.

Scope

One Project county, two centers, will participate in the study. Their success will be compared to programs proceeding with no special emphasis given to staff implementation of objectives. Also to be compared to results of Studies C and D.

Study C

DEVELOPMENT OF TEACHER-HOMEMAKER HOME VISIT TEAMS

Purpose

To involve parents who cannot participate as volunteers or in other parent groups due to isolation or problems of child care more directly in the program. To involve the parent directly in the educational process of the child. To interest the parent in self-help through positive growth experiences of the child. To develop closer coordination between child development and homemaking services. To test focussed services staff implementation model within one program variation.

Method

Utilizing the stated program objectives, each Homemaker will be paired with a member of the child development center Teaching Staff. Each pair will visit a homebound mother once a week for child-centered activities. Each pair will plan the visit carefully beforehand and evaluate its effectiveness afterwards. Activities will be planned to include materials and objects available in the home. The mother and child will be asked to work on activities between visits. These will include areas where the child needs extra help. Long range goals will be to include all children present in the home in activities as the mother and staff establish a good working relationship and to increase the mother's desire and ability to participate in groups outside the home. Training sessions will parallel those set for Study B. Use of teaching skills employed in the Mother Training Project will be stressed.

Scope

One county with two centers.

Study D

DEVELOPMENT OF TEACHER-HOMEMAKER-VOLUNTEER COORDINATOR TEAMS FOR TRAINING PARENT VOLUNTEERS

Purpose

To establish effective teacher aide training procedures for parent volunteers. To develop a team approach among Project staff in providing homemaking and child development skills in a group setting. Development of this approach as one means of training members of the PAC. Incorporation of this approach as a means of including Project parents in the career development ladder. Group training is an effective way to utilize Project staff within a focussed services staff implementation model. To determine if parents so trained can extend the reach of Project staff to those families who refuse to participate fully in the Project. To develop skills of volunteers to assist in meeting the special needs of children.

Method

Each week the child development center Teaching Staff, Homemakers, and Volunteer Coordinator will meet for one-half day to plan sessions with the parent volunteer group and to evaluate the success of previous sessions according to stated program objectives. The parent volunteer group is to be trained to function in capacity of teacher aides in the center and to be trained as a group to teach basic homemaking skills in terms of program objectives. Volunteers expressing strong preference for child development or homemaking work would be allowed to increase their training in the area of choice after introductory work is completed. Volunteer groups would meet once a week for a two-hour session. They would work in the centers at other times under the supervision of one member of the staff. They would progress in training according to the use of skills and series of phases used in the Mother Training Project. Those receiving homemaking skills would take "practice leadership" roles in parent group meetings. As their skills increase they would serve as assistants to Homemakers on home visits. As a group they would be given an opportunity to suggest and implement under supervision approaches to hard-to-reach families. Training will parallel that of Study C.

Scope

One county with two centers.